Ameri Bee Journal

OBER 1969

Volume

Number 10

The Great Southeast

North Section

Requeening Pays Off

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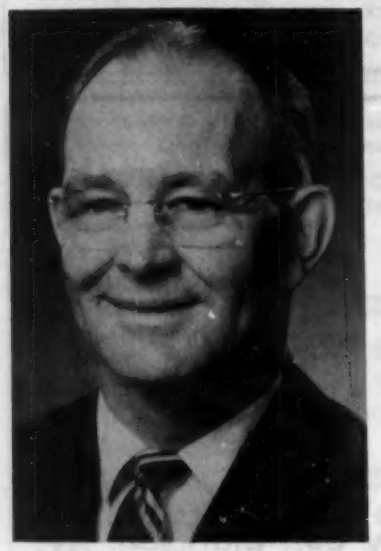
The Great Southeast



Southeastern Editor

●

W. A. Stephen

To most beekeepers in the Southeast, Steve is a figure of great respect. As Extension Beekeeper at North Carolina State College, Raleigh, he knows almost every beekeeper in the state by their first name. He was born in Ontario, graduated from the Agricultural College at Guelph and worked for the Bee Division Experimental Farm until 1946 when he accepted the present position in the Agricultural Extension Service in North Carolina. He studied in Germany and visited most of the large beekeeping research centers in England and on the Continent. He was chosen Southeastern Editor because of his knowledge of the country and the beekeepers.

Picture Editor

●

William G. Eaton

Pictures may be a hobby with Bill but he sure knows how to secure great depth and detail in the pictures he takes. He is a school teacher in Winchester, Kentucky, in the Clark County system, teaching grade school music, both vocal and instrumental. Bees are a side line but a serious one and they have been ever since he was a farm lad in North Carolina. He began writing for ABJ about 1956. Some will remember his story about George Demaree in December 1956. His masterpiece for this first, or northern part of the coverage of the Southeast, is the cover, an explanation of which is on the opposite page. He is now preparing the cover for November.

North Section
October

We thought a regional story could easily be done in one issue of ABJ. How we were fooled! This one will take two. The map shows the area and states covered. This north section covers Maryland, West Virginia, Virginia, Kentucky and Tennessee.

South Section
November

Next month will cover the southern part of the area, North Carolina, South Carolina, Georgia, Alabama, Mississippi, and Florida.

The Cover Story

There are fifteen pictures in the cover of this issue, all of considerable interest and all devoted to the Southeast. There are four pictures at the top. The one at the left is of the D. S. Winsett processing plant at Pinnacle, N. C. with Charles Winsett explaining the operation. They pack large quantities of honey. The second picture is an attractive fair display by Mr. and Mrs. Norman Bishop, Louisville, first place winner 1956 State Fair.—Third picture. Queen rearing demonstration by L. A. Sheppard of Aberdeen, N. C., 4-H beekeeping champ; W. A. Stephen, Extension Specialist and Everette Floyd, former association president, are getting a course of sprouts.—Top right. Ransler Barnes, queen breeder, Cosby, Tennessee, places a ripe queen cell in a nuc.

Going to the large group of illustrations at the bottom, follow the small pictures at the right from top to bottom.—Sourwood. Producer of choice non-granulating honey (now infested with insect damage which will need adequate control if sourwood is to continue in the area.)—Next, Charlie Dehart of Elliott County, Kentucky and County Agent Rice (in veil) inspect brood pattern of new queen.—Then a bee gum. Beekeeping began in the Southland in hives like this, a natural home but not practical. Many of them are still in existence.—Bottom row of pictures, right to left. First, golden-rod which, with aster provides stores for winter in many areas.—Roadside stand of Robert Vance of Pleasureville, Kentucky, on Highway 421.—Next, basswood bloom attached to the underside of the leaf, a source of nectar. Then the left group from bottom to top; First, Willena Jean Eaton, daughter of photo editor, William Eaton, of Winchester, Ky. demonstrates the use of clover honey in fruit salad dressing.—Above Willena, white Dutch clover, king of honey plants throughout the Southeast ever since the virgin forests were cleared away.—Next, commercial men will recognize this yard at inspection time in the spring; apiary of Hillside Honey Farms.—At top, closeup of bees and brood.—Finally, the center picture. The apiary of R. A. Edwards, Richmond, Kentucky, formerly director of the elementary training school of Eastern Kentucky State Teachers' College. He has one of the finest small beekeeping operations to be found anywhere.

William Eaton,
Picture Editor

A Preview of The Southeast

by W. A. Stephen

The area we call the Southern States includes all the states as far north as Maryland, West Virginia, Kentucky and westward even to Arkansas and Texas. However, the type of beekeeping carried on in Arkansas and Texas is more like that farther west and north, so we decided to leave out these states and confine ourselves to those east of the Mississippi and south of Kentucky, West Virginia and Maryland.

In this area we have approximately one-third of the bees in the United States and over half of the beekeepers as interpreted by the number of bees on farms reporting in the 1950 census. I realize that there are many beekeepers and many colonies not reported in the Farm Census, but they do form a basis of comparison fairly applicable in the Southern States.

Of course, the size of farms varies. We have the smallest farms in North Carolina averaging 67 acres while in Florida they average 290 acres. Over the entire area, they probably average 100 acres or less, so the land holdings are small and the numbers of colonies of bees are small, averaging six to the farm with the exception of Florida where the average is 22 colonies per farm.

Southern beekeepers can be divided into beekeepers and bee-havers; those who give bees close attention and those whose "gums" sit out back. Often the only thing the bee-havers think of is supering and robbing their bees.

However, generally our beekeepers might be divided into those who really pay attention to their bees and those who do the least they can. The first group is made up of better beekeepers than many commercial men I have known elsewhere. They are better because they have to be. For instance, compare our major sources in North Carolina with those in Ohio. In North Carolina our honeyflow is over with the exception of sourwood by mid-June while in Ohio the main honeyflow starts about a month later, giving more time for colony build-up and the flow continues two months longer. In North Carolina colonies must be in prime condition by the end of April when the flow begins and if a colony swarms, no surplus is stored.

We do not have as many beekeepers in America today as we had after World War II. The decrease is very noticeable in Canada, and in the United States the number of colonies of honey bees is also decreasing. The large exceptions are California which now has well over 10 per cent of the bees in the States and Florida where a 43 per cent increase since 1946 has made up for the decline in all the other states which I have included in the Southeast.

As for the production of honey, our colony average is low compared with production in the states farther north and west. The exception again is Florida where the average production is two or three times the average in most of the other states. So Florida is in the position of being the only state with an exportable surplus of honey. However, if Florida beekeepers could get each of the people in the state to eat five pounds of honey a year, they would have to import honey.

With reference to the consumption of honey, 9.6 of our farms, or an average of about one in ten have bees, yet only 7.2 per cent of the rural population use honey. Incidentally, the West shows us up. Over 27 per cent of the western farm population uses honey.

The honey produced in this southern area is different. We have a great variety of trees and shrubs from which our bees gather honey, so we have a wide choice of flavors. Most of our honeys are full-flavored. It seems to me most people have never had a chance to approach the matter of honey taste in an unbiased way. We beekeepers influence their decisions. We speak of beauty in a honey that lacks color and of flavor in a honey that lacks the essential oils contributed by wild flowers, shrubs, and trees. We let our eyes tell our stomachs what is good.

Honey is one of our best foods. Research has shown that the darker colored honeys contain more minerals than the light colored ones. They are more flavorful, but it is not always correct to associate dark color with full flavor. For instance, sourwood honey is found in only one place in the world, in the Appalachian Highlands from West Virginia to Georgia

and Alabama. It is full flavored, almost water white, and is so esteemed that it usually passes from the producer directly to the consumer at prices running from 50 cents to $1.00 a pound. However, we get a crop of sourwood honey only once every three to five years.

Full-flavored honeys usually sell at a higher price than those of less pronounced flavor. Of the light flavorful honeys produced in quantities, we might mention holly, gallberry, tupelo, palmetto, orange, mangrove and basswood. The latter is the non-cultivated plant producing in quantity elsewhere than in the Southeast.

One of the principal sources of early honey is the tulip poplar a honey of reddish color and a rather bland flavor. Coming at a time when berries, early clovers, black locust and many early shrubs are in bloom, it gives a characteristic reddish color to much of the spring honey. With the decline of buckwheat honey in the North, however, tulip poplar is finding a new outlet in the New York market.

We do not need to look outside our own borders for more markets. We do not produce enough honey to give each of our citizens the national average of 1.4 pounds a year. There are places where honey is in surplus supply, but it is the result of unorganized marketing. From all records and indications there never was and never will be a surplus of honey. In fact, by 1965 we may not be producing enough honey in the United States to give each of our people one pound a year, and by the end of the century honey may be as scarce as when man hunted for it in hollow trees and rocks.

Economists predict that our expanding population and our higher standard of living will require a 20 per cent increase in food production in the next decade and 50 per cent in the next twenty years. Consumer buying power increased 55 per cent between 1925 and 1955. It is predicted that it may double what it now is by 1975. Consumer incomes are increasing fast and they are increasing faster in the Southeast than elsewhere. Population changes are more rapid in the southern states, too. The shift of industry to the South is bringing more markets to our doors.

You have heard of inter-urbanization, large semi-rural, semi-urban communities occupying vast regions from Washington to New York, Detroit to Chicago, Los Angeles to San Francisco and from Palm Beach to Miami. One of the largest predicted areas following this trend will stretch from north Georgia to southern Virginia. The population of this vast area will need food, and honey can have a place in the people's diet. At the rate the beekeeping industry is going, we shall not have honey for them.

These citizens of inter-urbia will be in a position, of course, to produce their own honey in these rural nonfarming communities. They would be hobbyists. Some of you may think of such a group as being of little consequence and yet from my observations the hobbyists are the ones that contribute most to publicity for the industry. They are not too busy to help a beginner. If it were not for these little fellows we have now, we wouldn't have the interest that we have in beekeeping in the Southeast.

Maryland

by GEORGE ABRAMS
Extension Apiculturist, University of Maryland

The Maryland beekeeping industry is in a sound and healthy condition. This happy situation reflects the influence of three major factors: a strong adjacent retail honey market, adequate bee forage, and helpful state administration.

The honey market could not be other than good. Maryland beekeepers service a relatively small territory that encompasses some three million people. The Washington, D. C. and Baltimore metropolitan areas are fast coalescing. They form a two-million population belt through the middle of the state. Approximately another million people do their buying in numerous medium-sized cities and towns. Our market potential is tremendous, and Maryland-produced honey supplies only a small fraction of the total honey sold. We are proverbially sold out by the beginning of the new year. Our market is 90 per cent retail, and most of that is producer to consumer. The large chain groceries establish to some extent our retail price. One-pound jars are selling for from 39 to 41 cents in the chains. We have a good market for chunk and section comb honey.

Bee forage is not comparable to more favored parts of the country. However, we have learned to make do with a fair variety of plants and situations that offer a succession of blooming dates. Our biggest drawback is the midsummer depression period that covers most of the state from mid-July until mid-September. This depression accounts for both the small number of full-time commercial operators and also for the presence of the same, as one must migrate to avoid the depression and up colony averages. Beekeeping, therefore, remains mainly a side-line industry. It takes a minimum of 50 pounds of honey to winter a colony in Maryland, and nearly a like amount to span the depression period. Stationary beekeepers have this solid fact to face. They can count on a surplus of only 30 to 60 pounds average per colony.

The migratory beekeepers have several excellent routines for avoiding the depression period, and expect to average upwards of 100 pounds surplus. They figure by short haul to produce over 100 pounds per colony surplus. The rent to orchardists carries their yearly trucking costs, and as they receive approximately 20 cents net for their honey, they can make a decent living. An increasing number of side-line operators are beginning to migrate and find it profitable.

Maryland can be divided, on the basis of nectar resources, into four regions. The greatest land mass of the state is roughly an upside-down triangle; starting at the point of the southern Maryland peninsula (between the Potomac River and Chesapeake Bay), and spreading out northward to the Pennsylvania line. The northern side of this triangle extends eastward to Delaware and westward to the Blue Ridge Mountains. This is mainly a tulip tree region (with help in some years from locust). The southern part is also a holly region, and the combined tulip-holly flow, starting about May 1, is reliable and strong. Holly loses its importance north of a line from Washington to Baltimore. The northern part of this region is a good agricultural area, much of it with underlying limestone. Here English clover and sweet clover

add to and lengthen the general flow.

A small region with a clover-blue weed (viper's bugloss) honeyflow lies west of the tulip region triangle. It extends westward some 30 miles, and includes the Middletown and Cumberland Valleys (spill-over of the Shenandoah Valley of Virginia into Maryland). This is strictly Piedmont Plateau, and is limestone over most of it. This region offers the heaviest flow in the state in good years. The flow starts about May 15th. The late July and August depression is annually severe.

Still westward in the two mountain counties lies the most reliable region in the state. This is largely mountain range and narrow valley. The main sources are sumac, basswood, (in steep hill-side situations), tulip tree (returning after heavy lumbering), blue weed, and some clover, in that order of importance. The flow starts about June 1 in the eastern part of the region, and, due to altitude, as much as a month later in the western part, only 30 miles or so distant. Very short haul migrations are practiced here with profit. Buckwheat helps to ease the depression period and in good years a second crop is harvested from this source.

The eastern shore region lies east of the Chesapeake Bay. It is mainly unreliable, as it is for the most part a one crop (clover) region. The southern part has holly to help, and fair crops are secured. Spot flows from lima bean plantings offer reliable August-September surplus flows, and migratory beekeepers move in to avoid the depression elsewhere, to secure a second surplus crop, to gain winter stores, and to take advantage of the milder and shorter wintering period and the early build-up from maple and alder.

Colonies in sationary apiaries are maintained in hives with two (often three) full depth brood chambers. This large brood chamber is required to store the food necessary to bridge the mid-summer depression, the winter period, and to assure sufficient food and space for spring brood rearing. A "must" under Maryland conditions is early and strong brood rearing, as our major flow from tulip tree (and holly) comes early over most of the state (May 1-15). Egg laying starts about January 15-20.

The migratory colonies are housed in single story hives until after they come out of the orchards. These colonies usually winter in the milder climate of the eastern shore region (on last summer set for lima bean).

First resident Short Course in Apiculture at the University of Maryland, June, 1959. Seventy-two in attendance.

Women attending four day session in bee culture at the Annual Rural Women's Short Course at the University in June, 1959. (Professor George Abrams in front row.)

About April 20 they are moved to the orchards, mainly in western Maryland or southern Pennsylvania. The prevailing rental is $5.00. They move out of the orchards about May 5 and go to their first summer set, either in the Cumberland Valley or mountain regions. Rarely are they moved to the tulip tree region as they need the extra time afforded by the later western flows for build-up. The colonies are stripped by July 1 and go either to the lima bean on the eastern shore, where they generally remain over winter, or to buckwheat in the mountains. Some move out of state to sourwood in West Virginia.

The state has a very active and effective beekeepers' association, now celebrating its fifteenth anniversary. The Association sponsors a continuing educational and promotional program through regional meetings, TV, radio, and honey exhibitions. Our Winter Honey Show (22nd annual in 1959) offers $350.00 in premiums.

Six County Fair exhibitions (each with $195.00 in premiums) and the State Fair exhibition ($650.00) are entirely association projects.

The College of Agriculture of the University of Maryland has provided an apiculture building, which houses a classroom and laboratory facilities, a museum, and beekeeping library. Undergraduate courses totaling 5 hours are offered. The Extension Service sponsors result and method demonstrations, nectar resources studies, short courses (evening, and resident), a 4-H school, a course for rural women, and a general bee culture information service. The Department of Entomology, through the office of the State Entomologist in charge of regulatory work, employs nine regional per diem apiary inspectors.

Changes in Maryland Beekeeping

by Harold L. Kelly
Silver Spring

During the last 50 years beekeeping has changed materially and probably what has happened in Maryland has also happened in a general way in most states. I have been keeping bees in Maryland about 42 years and when I began, the 8-frame Langstroth and Danzenbaker hive were still being used although they were losing ground in favor of the 10-frame standard hive.

During World War I when Dr. Phillips began his campaign for greater honey production, many honey producers changed from the small brood chambers and section comb honey production to the larger brood chambers and extracted honey production. Today, a beekeeper who devotes his entire effort to production of section comb honey is rare and is usually a back-lot beekeeper. While some of the larger beekeepers produce some comb honey, section comb honey is a scarce item on the market. The chunk honey pack has proved popular and is much easier to produce so it is doubtful if section comb honey will ever again be produced in quantity in this state.

Improved highways have had a decided effect on beekeeping. Maintaining stationary apiaries fifty or more miles from home is not now unusual and migratory beekeeping is practiced to a considerable extent. Before the advent of good highways such migration was unheard of. The present day super highways is making it even easier to move bees faster so at the present rate of construction, the time is not far distant when moves of 100 to 300 miles can be made without the difficulties of transporting bees through towns and cities. Even one Maryland beekeeper uses an airplane to visit his distant yards.

In contrast with the small brood chamber of former years, the stationary beekeeper now uses the two story 10-frame brood chamber. Many of those who are advocates of large brood chambers often use the three-story hive. However, the migratory beekeeper clings to the 10-frame one-

Entomology Building which houses the Beekeeping and Insect Pathology Section, U.S.D.A., Beltsville, Maryland.

Disease diagnosis service for beekeepers at the Beltsville Office. Technician Melvin Abramovitz uses ultra violet to detect both American and European foulbrood.

Abramovitz uses Brine Shrimp Test to detect the presence of any toxic material in specimens sent in for examination.

Undergraduate class in apiculture in the fall term at the University of Maryland.

story hive to avoid heavy lifting and extra labor.

Swarm control is still a will-o'-the-wisp but the migratory operator seems to have no more trouble than does the big hive stationary beekeeper. Perhaps the keeping of bees in an almost constant honeyflow has a deterring effect.

Honey sources have shown a decided change, primarily due to the changes in farm crops. Sweet clover has never been an important source except in spots and alsike clover, once an important hay and seed crop, has given way to red clover and alfalfa, neither of which are nectar sources in Maryland. Soybeans have also displaced farm crops that might contribute to the total honey supply. On the eastern shore, where lima bean, a good honey plant, is grown in thousands of acres, there appears to be ten acres of soybean to one acre of lima bean. There has only been one authentic report of soybean yielding nectar and that was during a drought in 1957. It is possible that under certain climatic conditions, soybeans will yield nectar. In southern Maryland, where tobacco has always been the cash crop, soybean acreage now seems to equal tobacco yet no honey has been reported from this source in that part of Maryland.

Tulip tree, regarded as one of the most reliable sources, has not yielded a good crop in the last five or six years. Whether the plant has changed its nectar secreting habits or the bees are showing a preference for blackberry which has the same blossoming period, is not known.

Southern Maryland previously was regarded as a poor beekeeping region, probably because of the lack of clovers and because it was a one crop region, tobacco. However, I placed an apiary deep in the tobacco country with very satisfactory results both as to quantity and quality of honey. Southern Maryland has thousands of acres in swamp and woodland, with black gum, tulip tree, and holly. In the fallow tobacco fields are vetch and blueweed (viper's bugloss). Along roadsides, on highway banks and in some fields is partridge pea, which gives a good midsummer flow of a poor quality honey, but good for winter stores. All of this indicates that beekeeping will develop in that region.

In recent years new honey plants have appeared. The one with the most promise is burr marigold, one of the Bidens and a relative of the Spanish needles. From midsummer on, some fields are yellow with it. Bees are usually active on the blossoms but as yet no surplus has been noted. A prominent Virginia beekeeper reported a good surplus believed to have been made from that source in an area not far from Washington, D.C. The plant seems to be spreading rapidly and we are hopeful for an eventual midsummer flow to shorten our usual long dearth period.

Chicory is another plant that I do not recall seeing 25 or 30 years ago and many roadsides are now blue with it during June and July and it is spreading into the fields. Bees work it some but the blossoms close in midday so are available to the bees only a few hours. Wild artichoke is coming in but not in enough quantity to get concerned about yet.

Wild turnip, an early blossoming plant, is becoming common along new highways and from the way bees work it, promises to be important for a spring build-up. It blooms at the same time as wild mustard.

Maryland is not one of the large states in quantity production. However, the variety of flavors and quality makes Maryland honey much sought after. With all this in our favor and the dense population in our reach, we have no marketing problem.

Migratory bee yard among limestone rocks in clover; set in the Cumberland Valley in the Antietam Valley of the Civil War near the famous Burnside Bridge. (Photo by Lloyd Shearman, Glenarm, Maryland.)

Same yard in lima bean location on the Eastern Shore. Note airplane often used to service these apiaries. (Photo from Lloyd Shearman)

West Virginia — — — —

O. M. Dick, Jr.
Dept. of Agriculture, Inwood

One of the author's apiaries in Berkely County, Eastern Panhandle; operated for both pollination and honey.

This state's mountainous terrain is a factor in keeping most apiaries small and many of them are established mainly to provide the immediate family with a supply of honey. This has tended to create small interest in beekeeping and to hold back the possibilities of expansion of apiaries to commercial size. These small beekeepers do not realize that there are many tons of superb quality tulip poplar, linden and sourwood honeys wasted each season in these mountain areas.

Of course, the areas for the production of these honeys are selective because many acres of these plants have fallen to the lumberman. Those few beekeepers who have been convinced that productive locations can be found and who have expanded their activities have produced tons of quality honey with a ready sale. In the South Branch Valley and Ohio River sections, apiaries are somewhat larger. The quality of honey is generally good but intensive farming limits production.

The most extensive beekeeping in the state is in the eastern panhandle in Morgan, Berkeley, and Jefferson counties. From 1930 to the advent of DDT, apiaries in these counties were scattered and commercial apiaries produced phenominal crops of section honey in hives designed for that purpose. Those beekeepers that favored modern trends for the production of chunk honey and extracted honey and the modern type of hive for section honey, produced crops that we beekeepers of today in these counties only dream about.

There are four factors for today's lower colony production in the panhandle.

1. The West Virginia Horticultural Society approached the beekeepers of the Eastern Panhandle Association for more bees and better colonies for fruit pollination, since the area is an intensive fruit producing region. The fruit organization also approached the Commissioner of Agriculture for an inspector for disease control and promotional work. This produced more beekeepers, of course, and at this time the area is saturated with apiaries that bring in an incentive income from pollinating rentals and honey also. This saturation has naturally lowered honey production.

2. The introduction of the newer insecticides for orchard spraying, however, sometimes eliminates an entire apiary or takes a toll of field bees that never get back to the hive, a condition that quite often goes unnoticed by the beekeeper and a reduced honey crop is attributed to some other factor.

3. The great increase of spittlebug on legumes and the recent invasion of alfalfa weevil and pea weevil on alfalfa has brought into the area a necessary program of insect control. In planning the fruit and legume plots in relation to apiary sites there is no place left where the beekeeper can escape damage from these programs of insect control. So, once more, the production of honey per colony is lowered.

4. Those beekeepers who aim to get rich quickly from orchard rentals are a hazard as far as disease is concerned and their bees saturate the area. As a rule they lay the colonies aside until the next fruit blooming season, hoping to cash in then. There is no thought of honey production which would reduce disease and promote better beekeeping and increase honey tonnage.

Honey from the Shenandoah Valley of West Virginia is of the highest quality and the fruit bloom in the area is usually supplementary to the beekeeper. The honeys are a blend of approximately 20 different flora. Locust, tulip poplar, berries, clovers, linn, blue thistle and sumac are the main crops. In 1958 the crop was sold before it was produced because of the high quality. Most crops are cut comb and extracted honey for the chunk pack. A few producers specialize in section comb honey.

About September 15, the fall aster in these counties begin to yield and some years furnishes bees with tons of winter stores. Several years I harvested some of this honey but it was unfit for general use, since only a few persons liked its flavor.

Management Methods

by A. D. Hiett
Seldom Seen Farms, Martinsburg

In West Virginia plans for a successful season in beekeeping must be started in the late summer and fall. A colony uses considerable honey and so a large cluster of bees in late fall is important for good wintering since packing is not practiced here. Forty to fifty pounds of honey is necessary for good wintering.

Winter losses are usually replaced with package bees installed in late March or early April. Most yards are worked in March and weak colonies doubled until packages can be placed on the extra combs. Those low in stores are fed syrup and sulfa to get them ready for orchard pollination which starts normally about the 20th of April.

Poisoning is a disturbing factor in the eastern panhandle. First, from scattered bloom under the trees in the orchards, then from alfalfa fields sprayed for weevil and spittlebug. Most alfalfa fields are teeming with blooming cress, dandelion, and chickweed at spraying time.

Colonies that escape poisoning are given a super of combs as soon as possible after taking them from the orchard. This opens the crowded brood nest and helps to prevent swarming. About the last of May a cut comb super is placed above the first set of shallow extracting combs, then as the season advances the completed extracting combs are raised to the top and the comb super moved down with an empty one between. In most cases, excluders are used. Finished comb is removed and packed as soon as possible.

These are the practices for the production of chunk honey. For section comb, the same procedures are followed as in other territory. The comb honey markets are ready early in the summer and close in late fall. Most of the honey is sold by mid-November.

Virginia

by W. A. STEPHEN

In the northern part of western Virginia lies the famous apple producing Shenandoah Valley. Here thousands of colonies of bees are rented each year for pollination. This is limestone country and good crops of clover honey are obtained. Blue thistle or viper's bugloss also contributes to the surplus crop. Tulip poplar is the most abundant honey plant, but some sourwood occurs on either side of the Valley. There are few bees in the mountains to the west and not enough over-all to take advantage of the honeyflows. Basswood, or linn, grows in this section and produces a white honey that sells at premium prices. Beekeepers in these localities do not super for the tulip poplar flow, but build up on it for the basswood that blooms later. A few beekeepers rent out their bees for pollination.

Some years in central Virginia, according to Mr. George Vest of Lynchburg, the bees produce large quantities of honeydew about the same time the sourwoods bloom. This is undoubtedly the melezitose type of honeydew as it granulates before it is even extracted. Some beekeepers have found a ready market in New York for this honey cut into chunks and packed in glass filled with liquid honey. The area contains mostly small beekeepers, representing all walks of life. One of the largest negro beekeepers in the southeast operates about 300 colonies here.

One of the largest beekeepers in Virginia, Mr. H. L. Maxwell, Berryville, operates some 50 apiaries in Virginia and West Virginia, totaling around 2,500 colonies. Virginia has been the seat of operation for many outstanding figures such as Capt. J. E. Hetherington. At one time he had about 3,000 colonies of bees operating mostly in New York State, but also in Virginia and Florida. Pellett's "History of American Beekeeping" says that Hetherington received much publicity as the most extensive beekeeper in the world although it is doubtful whether he was entitled to such recognition.

Maxwell says that the first chunk comb honey was shipped out of Virginia about 50 years ago packed in a copper lined trunk. The key was mailed to the consignee. Mr. F. Danzenbaker, inventor of the closed-end frames, conducted his operations in this state and Messrs. Chester and Charlie Bass of Front Royal today operate about 1,300 colonies for section comb honey using reversible frames similar to those advocated by Danzenbaker.

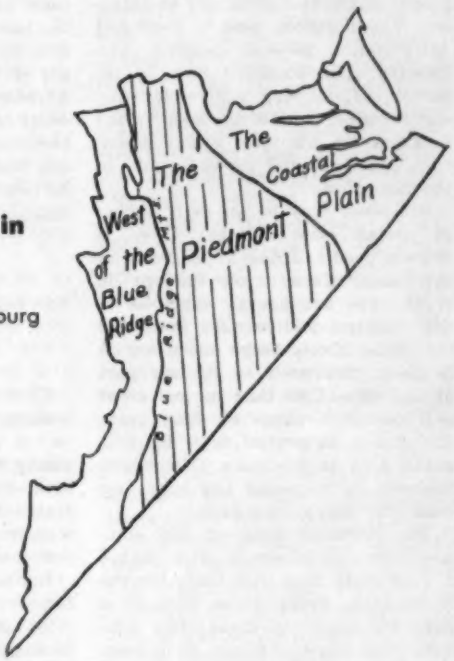
The Stovers of Mississippi had their beginning in Strasburg, Virginia. It is recorded that they moved to Mississippi for a nectar flow which did not materialize then turned to the production of package bees and queens to become pioneers in the business.

Beekeeping in the orchard areas of northern Virginia and the Shenandoah Valley, also in western Virginia, Pennsylvania, and Maryland has had a rough time following both World Wars. The increased use of insecticides after World War I killed all stocks within a flight range of the orchards. After World War II, the newer insecticides likewise took their toll of honeybees.

As in most of the Southeast Region, much of the beekeeping in Virginia is marginal with few large commercial beekeepers today. The type of beekeeping carried on in the mountains is the same as found in the Appalachian region of North Carolina, Tennessee and Georgia.

Beekeeping Areas in Virginia

by John M. Amos
Extension Service, Blacksburg



The Costal Plain Area

A line drawn from Alexandria, just west of Richmond to Boydton roughly separates the Coastal Plain area of the state from the Piedmont section. None of the area is over 250 feet above sea level and corn is the principal crop. Pasture land is second with soybeans next. Small grain and peanuts are next in acreage. At one time this area had large areas of wooded lands containing large quantities of pine but much of this pine has disappeared and hardwoods predominate much of the wooded land with tulip poplar being one of the important species.

Large areas of honey plants are lacking. Clovers in the pastures are usually reduced in growth by the hot summer months and dry weather. The honeyflow is largely over by the middle of June or shortly thereafter. Holly, blueberry, poplar, gallberry, clovers and miscellaneous sources form the honey crop. It is usually rather dark in color and often has honeydew to make it less desirable.

The Piedmont Area

The area of the state is bounded by the line mentioned above on the east and the Blue Ridge Mountains on the west. Agronomists often divide the Piedmont into the northern

Sourwood bloom, honey is top table grade and commands a ready market. (Photo from John Amos.)

Tulip Poplar, profuse yielder of amber honey. Bees work it until dusk. (Photo from John Amos.)

and southern areas because the crops grown in the two areas are so different. The northern area is beef and dairy cattle, general farming, and forestry. The southern area is tobacco, beef, dairying, general farming and forestry. Most of the honey plant areas are in the tulip poplar region with sourwood and clover to add to the honeyflow.

Blueberry may be an early source of nectar some seasons. There is often a good fall flow from asters in this area. Honey crop failures do occur here but not as often as in the western and eastern parts of the state. Honey crops are often as large in this area as in any part of the state. Less than normal crops will occur in three or four years out of ten. In general, it is the best honey area in the state. Oftentimes, however, tulip poplar and honeydew make the honey crop dark.

The northern area of the state where limestone occurs often makes a good early flow with little for the fall season. Areas where farm land joins the mountain areas often produce good crops of honey. It is from this area and the Shenandoah Valley that most bees are moved to orchards for apple pollination.

Western and Southwestern Virginia

There are very few bees in the mountainous area west of the Shenandoah Valley. Usually very few colonies are found at any one location. The Valley produces mostly clover honey.

In the mountain areas on either side of the valley some sourwood occurs but it is not very abundant. Tulip poplar is by far the most important honey plant in the area and now that poplar is no longer being cut for mine props, this plant is on the increase. Thousands of acres of 4 to 8 inch trees are now large enough that they should yield some nectar in most seasons. Though the honey is dark and thick, it readily sold to the bakery trade. There are not enough bees in this area to take advantage of the honeyflows that occur from this plant. In some special localities, by careful selection, one can find some areas where basswood or linn produces a white honey that is readily sold on the local market at premium prices. Some beekeepers do not super for the poplar flow, preferring to build the bees up on it and getting basswood for their use and local market. Some sourwood also occurs in the mountains of this area but is not very abundant.

Only a few bees are rented from this area for pollination.

Beekeeping in Central Virginia

by George Vest
Manager Dadant Branch Office, Lynchburg

Central Virginia has mostly small beekeepers who operate from one colony to three hundred. We have practically all types of people who keep bees—doctors, lawyers, clergymen, teachers, factory workers, railroad men, fire department men, merchants, policemen, farmers, etc.

One man who has been keeping bees for over half a century, is still interested and is active in attending the meetings of the association, a stauch believer that honey is a fine food and he eats it regularly.

A negro man in this section keeps over three hundred colonies, in fact, he is the largest negro beekeeper in the Southeast and a good one.

The chief sources of honey are fruit bloom and redbud, April 10-18; alsike clover, April 10-July 15; black gum, April 20-May 10; white clover April 20-July 25; black locust, April 25-May 5; crimson clover, April 24-May 20; tulip poplar, April 25-May 30; vetch, April 25-June 10; blackberry, April 30-May 20; privet, May 8-May 25; persimmon, May 22-June 8; sweet clover, June 1-July 5; sourwood, June 15-July 15; smartweed, July 4-Oct. 25; sumac, July 20-Aug. 5; goldenrod, Aug. 10- Oct. 10; aster, Sept. 25-Oct. 10.

Some beekeepers rent bees to orchardists for pollinating apples at $4.00 per colony provided the orchardist transports the hives to the orchard and returns them to the owner. If the owner does the hauling, he charges $5.00 to $6.00, depending on distance.

The bulk of the early honey crop is from tulip poplar and blackberry, which is a dark amber with lots of flavor. In years past the beekeepers packed and sold this honey for table use, but in the past few years the trend is toward commercial uses. At one time disposition of this kind of honey was quite a problem but for the past few years, the beekeepers have pooled their honey through their local association and sold it to a northern buyer for bakery goods and cough medicines.

There is never any difficulty in selling the sourwood honey crop. Even though sourwood blooms heavily every year, unfavorable weather often causes a complete failure even after the start of the flow and what promises to be a good prospect, may

result in a failure. Sourwood being our finest honey, every beekeeper looks forward to receiving a good crop as it always brings a premium price and pure sourwood honey never granulates.

In some years, the beekeepers have a great problem in determining the time of the sourwood flow and the bees instead store honeydew which is also light in color and it seems like the beginning of a sourwood crop. But even before it can be taken from the hive, it is completely granulated and cannot be extracted. Some people like honeydew and some cut out nice chunks of it, pack it in glass jars and fill with liquid honey which makes a nice blend, but usually sells at a low price. There is a ready market in New York for pure pine honeydew.

Skunks and bears are a menace to the bees in this section, especially where yards are in isolated places. There are many more skunks, however, than bears but both do much damage in outyards.

Little Commercial Beekeeping In Virginia

by H. L. Maxwell, Berryville

Beekeeping in Virginia is marginal, and most of the bees are owned by hobbyists. *Only three people in Virginia earn their livelihood from beekeeping today.* There are probably 15,000 colonies in good equipment, reasonably well cared for, and which produce some honey for sale. There are proabbly another 10,000 colonies in box hives and untended apiaries.

Beekeepers have never been commercially important. But there have been a few outstanding figures. Capt. Heatherington owned about 2,000 colonies and operated shortly after the Civil War, simultaneously in New York, Virginia and Florida. (According to George Rea, he was probably the largest beekeeper in the country in his time.)

Probably the oldest commercial outfit still maintained is the Bass outfit at Front Royal. Chester and Charlie operate 1300 colonies for section comb honey, making their sections substantially by the same operation set-up as their father around 1890. They use a hive with nine reversible frames, and operate single story colonies.

Another important outfit was that of Tanner Asher of Brookneal. He kept around 1000 colonies in 50 apiaries and produced honey commercially for 50 years. He operated two-story standard colonies made from lumber produced on his farm and produced chunk honey and extracted honey from tulip poplar and sourwood. His son, Kendall, still operates his business, but runs primarily for extracted honey.

Honey plants were in greater abundance around 1900 in the Shenandoah Valley. Much of the mountain land was cleared and the Yankee weed (blue thistle) was rampant. There was more linn, poplar and much Dutch clover and sumac. F. G. Bass had introduced Italians to his apiary and was safe from the great European foulbrood epidemic in 1905 which wiped out most of the black bees. Chester Bass said of his own bees that he had only 22 colonies out of 100 that survived and they were in poor condition.

World War I brought renewed interest because of the sugar shortage. Chester Bass expanded to 1200 colonies and had three employees besides himself. He also experimented with keeping bees in the dismal swamp, but had to give it up because of malaria.

The resurgence of beekeeping after World War I was dealt a heavy blow by the gradual increase of poison spray in the orchards. All bees in flight range were in time wiped out. Only the bees in the marginal areas of the valley survived. When I came on the scene in the late thirties, the larger fruit growers had to bring in their bees from other states for pollination.

In World War II history repeated itself. Stocks of bees were again built up in marginal areas away from the orchards, so there were plenty of bees close for pollination needs.

Most of the bees are owned at present by side-liners who do not depend on them for a livelihood. Orchard rentals are low because of this. They feel anything they get for pollination is clear income. There are reports of colonies leased for as low as $1.50 each.

This side line activity shows in the local honey market. Here the marginal beekeeper will pack his honey and peddle it to stores, with the attitude that he can produce and sell more cheaply than the commercial man. Realistically, the commercial producer looks on this type of beekeeper as a parasite, and in turn the small beekeeper looks on the commercial man with disfavor, mainly because of envy of his greater success.

So there is little cooperation. Bee meetings are poorly attended and not representative. There have been only sporadic efforts at promoting beekeeping in the state. VPI sponsored a series of annual short courses following the war, but they failed to attract any new blood. A bulletin was compiled and published called "Beekeeping in Virginia" and at least 5000 copies were distributed.

The most sustained effort at any official level has been that of the state inspector. This is probably true in most other states, *and it is essentially a police effort.* Diplomacy and tact have not been outstanding virtues and friction and ill will have often been the result of their visits. The beekeeper is a self-reliant and independent character and it is not uncommon for the inspector to be met with rebuff, sometimes at gun point.

The inspector is often an association secretary and he plays a prominent part in the activities of the association as he should. Quite often, too, the inspector is a beekeeper and so maintains a competitive basis with other beekeepers which excites friction and often resentment.

With the advent of drugs in bee disease control, a police effort through inspection is not so necessary and a more diplomatic approach by education is needed. Such a person can hold demonstrations, lectures to Scout groups, school assemblies, and clubs and generally promote the good of the beekeeper and so retain his good will and his support, as well as informing and encouraging youngsters to keep bees.

A resolution was approved at our last state meeting requesting such a service from VPI. Incidentally, John Amos, in his extension program at Tampa, with John Root, Leslie Little, and John Haynie set a fine example of how this might be done.

Statistically, it is easy to list the bees in Virginia. There is a cluster of medium sized beekeepers in central Virginia, around Lynchburg. Kendall Asher has the largest operation of about 1000 colonies. Others have

(Continued on page 411)

Kentucky

by William G. Eaton

It has been a source of great pride and complete satisfaction to serve as Photo Editor and as a corresponding secretary, so to speak, in the preparation of the special Southeastern issues. Someone has said, "Leisure becomes work and work becomes leisure; time has no meaning." That is how it has been in the preparation of the Kentucky section.

The contributions about Kentucky are representative ones. Concerning our photographs in the entire special issues, they have come from a variety of sources, professional and amateur alike and the entire staff wishes to say THANKS.

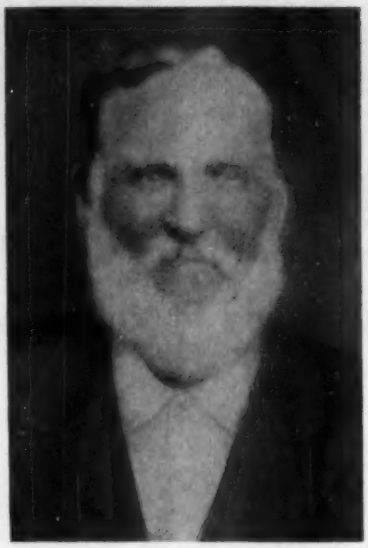
As an example, Raymond Layne sent a number of illustrations from the photographic department of station WFPK-TV, Channel 15, Louisville. Because of the length of his material, we have decided only to use two of those pictures, reserving the remainder for a special picture story at some other time. There are others who have contributed pictures which we were unable to use in their entirety.

I feel that right here it would be well to suggest to extension specialists, inspectors, county agents, etc. that you can greatly increase the effectiveness of your work by taking pictures of the unusual, as well as the commonplace things as you travel through the country. Make it a regular part of your job and it will be rewarding sooner or later. You do not need professional equipment. Any well-known name brand roll-film unit with a flash and simple focusing device is enough. Eastman Kodak Company puts out a guide, one of the finest, that sells for only $1.00, "How to Make Good Pictures."

Before our contributors tell the Kentucky story, I would like to share with our readers a few interesting facts, some of which have never been published before. For example, I am quite positive that the restored photo of George W. Demaree is being seen for the very first time and that it is the only known picture in existence of the famous beemaster.

Actually, Kentucky has stature for beekeeping which was begun by men of real character and rich heritage.

Bees were introduced into the area now known as Kentucky by Col. James Harrod. They were brought from Pennsylvania about 1780 to the Falls of the Ohio, now the city of Louisville. Also, organized beekeeping began at the sectional level with the start of the Southern Beekeepers' Association in 1874.



George W. Demaree, who introduced his famous swarm control plan in 1392. Authentic restored photo, the first time to have ever been used in any publication. (By Eaton.)

Kentucky State Association was organized in 1880 at Louisville with Dr. N. P. Allen, of Warren County, as the first president. Dr. Allen was a dentist. Gen. D. L. Adair, Hawesville, Kentucky, received a patent on his section beehive in 1867. He also developed an extractor which he called "Melipult." He worked on the theory of using two forces to eject the honey, which he claimed all other inventors had overlooked gravity in cooperation with centrifugal force. There is a model of Melipult still in existence but there is no record that it ever received a patent although it was applied for. Gen. Adair also claims to have invented the brood nest bee feeder, and he left a detailed account of his theories.

J. S. Reese, of Winchester, developed the first bee escape in the early 1880's by using the old-fashioned flytrap principle. The idea was later sold for a small sum and is now known as the Porter bee escape.

George W. Demaree, of Christiansburg, announced his now famous plan for swarm control in 1892. All of the records we now have about these early days are due to Mr. Demaree's efficiency as recording secretary of the State Association and as president for at least two years.

I have other interesting and important facts to share with you, as well as to enlarge on those mentioned, possibly in 1960 when the American Bee Journal will publish an entire special year—one hundred years of beekeeping.

We, the beekeepers, are a chosen group. Not everyone has the temperament to be a keeper of bees. So we

William Eaton, our Photo Editor, in apiary at Winchester. Beekeeping is a family project, with Verna (Mrs. Eaton) helping to pack honey and daughter Willena helping with equipment and selling. She also has a 4-H project in beekeeping.

have a debt to pay, since our Creator chose us to share the wonderful secrets of the hive and we are expected to serve as a faithful steward of this trust.

Now, about our various contributions. Locations in Kentucky are all mediocre. However, many of our leading beekeepers believe that the vast forest regions of the eastern and southeastern sections with the sourwood, locust, tulip poplar, mixed clovers and basswood, hold more possibilities than any other region at present. With a minimum of beekeeping education, farmers and residents in this area could, in a few short years, possibly develop one of the leading and finest small industries. Certainly it would be worth the effort since our coal fields are feeling the results of more and greater labor pressure.

Dr. Harvey Lovell, of the University of Louisville, discusses Kentucky conditions and honey plants, about which he is an authority.

The state's two leading commercial operators (by Kentucky standards) offer us some help. Morris Black and Robert Vance, both of Henry County, have a good deal to say about Kentucky management for successful beekeeping.

I regret that Mr. Walter T. Kelley, of Clarkson, could not serve as contributor as both he and Mrs. Kelley had planned to make a special trip to the eastern part of the state to gather first-hand information and make pictures for an account for the Kentucky section. Physical illness and operations on the part of both of them made this impossible.

One of our first contributors was R. A. Edwards, of Richmond, whom I hold in great esteem from my days at Eastern Kentucky State Teachers' College, where Mr. Edwards served as Director of the Elementary Training School for thirty-seven years. He was one of my professors and Mr. Raymond Layne, mentioned earlier, was one of his pupils also. In his retirement Mr. Edwards maintains one of the finest small beekeeping operations to be found anywhere.

Beekeeping in Kentucky

by Harvey B. Lovell
University of Louisville

The state of Kentucky is long and narrow. The eastern part of the state is mountainous, the western part is low and wet. The Ohio River forms the northern boundary and into it flow several large rivers: the Tennessee, Cumberland, Green, Kentucky, and Big Sandy. The north central part of the state is very fertile, the south central part often called the Barrens, is dry and sterile in many regions.

The eastern mountains consist of three ranges. The Cumberland Mountains are not very high, but consist of heavily wooded hills and fertile valleys, many of the latter being farmed. East of this is Pine Mountain, a long rugged range covered mostly with pine trees, and on the Virginia boundary is Big Black Mountain, the highest peak in the state with an altitude of 4150 feet. Some of the best beekeeping territory in the state lies in the mountains. The chief honey sources are trees, including locust, tulip tree, basswood, and sourwood. In the fall goldenrod, aster, and golden honey plant give a good surplus. There are many small beekeepers in this area.

The *Bluegrass Region.* This fertile region is divided into three parts also. The *Inner Bluegrass* centers around Fayette County where Lexington is located. The soil has plenty of phosphate and bluegrass and fescue grow luxuriantly. Most of the land is in great stock farms where some of the world's best race horses are raised. Where legumes are planted, beekeeping is successful. The apiary at the University of Kentucky, operated by Dr. Lee Townsend, regularly makes 100 pounds or more per colony. Most of the honey in this region comes from white clover, the sweet clovers, goldenrod, and aster.

The *Eden Shale* is a hilly area which separates the Inner from the Outer Bluegrass. Some of the largest beekeepers in the state operate in The Falmouth area. One beekeeper operated up to 400 colonies for many years. Near by, Moore's Strain Apiaries were famous for many years for their package bees and queens. This area contains coral berry, locally known as buckbrush, a low shrub which blooms for a long time in July and greatly extends the length of the flow.

The *Outer Bluegrass*, while not as flat and fertile as the Inner Bluegrass, is nevertheless an excellent farming country, and beekeeping flourishes in many places. Morris Black and Robert Vance operate several apiaries in Ohio County quite successfully. This area extends into Jefferson and Oldham counties, near Louisville where there are a great many small beekeepers. Wild aster is very abundant and often yields a super or more of honey in October.

The Pennyrile Plateau occupies most of the south central part of the state, from the Muldreaugh Escarpment (just north of Fort Knox) south into Tennessee, west to the Cumberland River, and east to the Cumberland Mountains. It is bounded on the north by a section of rounded hills called the *Knobs*. When the first settlers visited here they found a treeless area over a wide region which they, for want of a better name, called *The Barrens*. The soil is very thin; most of the water disappears into sink holes where it joins underground streams which have tunneled through the soft limestone rocks. Much of the dissolved salts are carried down with this water, leaving a sterile surface soil. Here we find Mammoth Cave where five levels of passages have furnished amusement for millions of tourists. Although much of the region is too dry and sterile to produce large crops, many beekeepers find satisfactory

Frost Aster, outstanding honey plant of central Kentucky. (Photo by Lovell.)

Black gum, or Black Tupelo (Nyssa sylvatica) a good nectar producer; pistillate flowers at left, staminate at right. (Lovell)

Another sourwood picture; the best honey plant in the Southern Alleghenies. (Lovell)

areas along the larger streams where the soil is more fertile. In late summer considerable honey is made from Spanish needles, a rich yellow honey which has a characteristic flavor. Tommy Hines, of Morgantown, has found a number of areas in Warren County where the clovers yield a good surplus too. In late summer there are large stretches of bitterweed which help produce a surplus for wintering. Some honey is made in June from persimmon, a small tree common in this area.

Western Coal Fields. This area has been badly strip-mined and thousands of acres are covered with sterile debris. The land is rolling and badly eroded and there is little beekeeping here. Black locust has been planted on some of the spoil banks, but it remains to be proved how useful it will be.

Mississippi Embayment locally known as the "Purchase Region" occupies the extreme western part of Kentucky, west of the Tennessee River. This area which is filled with swamps and oxbow lakes, contains an extension of the Gulf flora which extends up the Mississipppi Valley into southern Illinois. Spanish needles and wild cucumber are abundant late summer honey plants. On the plains of western Tennessee around Reel-Foot Lake there are large cotton plantations, a few of which spill over into adjacent Kentucky. The swamp tupelo *(Nyssa aquatica)* occurs here in wet areas which along with black willow may yield an early surplus. Blue vine is abundant in low corn fields where it sometimes almost crowds out the corn. Buttonbush fills the marshy areas and has invaded the muddy bottoms of inlets in Kentucky Lake, especially those exposed at low water. Most of the beekeepers here operate in a small way and are relatively untrained. The potential of this region is not being used. Proper stimulation by an extension worker would quickly expand the operations in the Mississippi Embayment region.

Other honey plants which are important in parts of Kentucky, at least in some seasons, include the common dandelion, an excellent source of early nectar and pollen; henbit *(Lamium purpureum)*, another early blooming weed much visited by bees for nectar; red maple and other maples valuable for both pollen and nectar; fruit bloom including apple, peach, plum, and cherry which give the bees an early lift and in turn are pollinated by the bees; false indigo, a bush that is abundant along the Ohio River and its tributaries; fall boneset, a common weed, blooming abundantly in August when other honey plants are scarce; ironweed, a tall, purple-flowered weed, which runs rampant in old pastures; wood dittany, a much visited plant on sterile hillsides especially in knob country; mountain mint (not confined to mountains), a species which often give a minty flavor to late summer honeys; lespedeza, both wild and introduced species; spotted knapweed, often called star-thistle which is much worked by bees for nectar. These and many other species aid in producing the honey crop.

Like many other southeastern states, after the spring and early summer honeyflow, Kentucky has a period of nearly two months when the bees are often idle for want of a flow. During this time they eat up much honey. This is not true in the eastern mountains, however, where the early season is much extended by sourwood and basswood, and in some places by buckbrush.

Changes in Kentucky

by Tommy Hines
State Inspector, Morgantown

Kentucky is a state rich in beekeeping heritage and at one time ranked among the top three states in total apiary products. Now we stand at a low ebb as far as honey production is concerned.

Why has this great change taken place during the last thirty to forty-five years? There are several factors including the great western sweet clover bloom where commercial outfits were the rule rather than the exception. There was the decline in vast acreages of sweet clover in northern Kentucky. There was also the woodsman's ax which took the once fine stands of sourwood and poplar. But more important than all of these was the failure of Kentucky beekeepers to protect their industry.

In Kentucky, as in some other lesser beekeeping states, a great many possibilities for beekeeping still exist particularly for the side-liner with a hundred and fifty to two hundred and fifty colonies and maybe a few commercial outfits.

We have the eastern Kentucky mountains where there can still be found large amounts of poplar, sourwood, and basswood; the northern area where there is a goodly amount of sweet clover and one of the better aster areas; the western part with a large acreage of Spanish needle; and the limestone regions with good areas of white clover.

As you can see we do have some possibilities for beekeeping to be brought to the front as a more profit-

Tommy Hines, Kentucky's only State Inspector. Tommy practices what he preaches.

able endeavor. But because there has only been a few who can see these things, we have fallen behind. However, as things look now we see a change beginning to take place as beekeepers begin to wake up to the needs of our industry—not only in Kentucky but all over the country. Never will Kentucky be a commercial state, but with good leadership we can see that she can make a valuable contribution to the total industry.

Editorial Comment

by William G. Eaton

Tommy Hines is another one of those efficient operators who uses the two queen system with good timing and along with that plenty of hard work. He operates 105 colonies near Morgantown and produced an average of 130 pounds per colony in the 1958 season. He is the only inspector in the State of Kentucky covering the state's 120 counties.

According to Tommy Hines, Kentucky needs better management, better pasture, and better disease control. He also believes that Kentucky needs an extension specialist in beekeeping from the University.

A recent talk at a meeting of the State Association, Hines gave his suggestions for management.

Prepare in the spring to operate two queen colonies, order queens early for everyone, have a division board feeder for each of the two deep bodies, divide the colonies in the spring about equally in bees and brood and then put a double screen separator between the bodies, and feed liberally.

The hives are kept with two queens until the main flow starts. If space is needed before, super each queen individually. When you remove the double screen put the two deep bodies together and put the supers on top and forget about the queen. His bee yards have about 15 colonies to each location.

The Cumberland Plateau

by R. A. EDWARDS, Richmond

When one reaches retirement age in an occupation that does not employ older men, he usually thinks of some hobby for his spare time, because if he has led an active life, he cannot sit down and twirl his thumbs. Beekeeping gives him a lively interest in nature, an opportunity for outdoor exercise and a few pennies to add to his reduced income.

After long years in a college classroom, I was released on my own. A few years previously the tenant on a farm I owned caught a stray swarm of bees in a box and gave them to me. My knowledge of beekeeping was limited to a vague memory of a few colonies my father kept in one corner of our yard. I remember he put a "cap" on top of each box hive. Then sometime in late summer he "robbed" them.

At a safe distance, I watched him cover his head with a piece of tobacco bed canvas, put on his gloves, and with a torch of rags in one hand and a butcher knife in the other, a cap full of honey was removed and emptied into a dishpan.

However, I had an idea there was a better and more modern way to keep bees. In my farm journal I ran across the name of a queen breeder and from him I learned about the American Bee Journal. Then I was on my way.

In the past fifteen years that one swarm in a box has increased to sixty in standard hives. This is my limit.

My average yield per colony is three times the average for the state. My farm has been sold, so the sixty colonies have been divided into three yards of twenty each. Two are on farms of former students who provide me with a location and I provide them with a supply of honey.

(Please turn the page)

R. A. Edwards, retired Director of Eastern's Training Schools, has three carefully chosen locations, one on the college farm where it also serves to teach students in beekeeping.

Edwards makes equipment from ammunition boxes from nearby Blue Grass Ordinance Department.

Management and sales tell the Edwards story. His crop is sold at a food market and road side stand. Here store manager Clay Coyle helps customer.

The third yard is on the college farm where it is available for observation each summer by a class in apiculture taught at the Agriculture Department of Eastern Kentucky State College. This elective course is taken by young men, and sometimes young ladies, who live in eastern Kentucky and are interested in putting into practices the proper procedures of bee culture as well as earning some college credit.

In the Cumberland Plateau, the sourwood is the source of exceedingly fine honey, light in color with a pleasant flavor. Tulip poplar also makes a good honey, darker and fuller flavored—rich and delightful. My yards are in sight of the mountains, but most of the nectar comes from white Dutch clover that grows in bluegrass pastures. It has a light lemon color and a mild flavor. When spring weather is favorable, we usually get some black locust honey about the first of May. It is nearly water white with a flavor that reminds you of the delicate sweet odor of the locust bloom.

The word honey in this region means chunk honey, strips of comb in a glass jar filled with extracted honey that has not been heated and has all of its delicate flavor and flower aroma. When properly packed in a glass jar with plenty of comb, it is beautiful and delicious.

All of my honey crop is sold out within three months. Only one food store handles it, and customers begin to ask for it before it is on the market. I furnish a four shelf display stand for pints, quarts, half-gallons and gallons. One roadside market sells the rest. Customers are mostly with out-of-the-state cars. They prefer chunk honey in quart fruit jar without a label and at a high price. Then they have something special to take home from Old Kentucky.

Management at Hillside Honey Farms

by **MORRIS BLACK,** Defoe
(Edited by William G. Eaton)

Black is a methodical and careful worker. He now has a new extracting room, 20 x 20, and a 30-frame extractor.

Spring Management

Our first inspection in late February or early March (depending on weather) is to check for dead colonies and dust the combs of all the living ones with sulfa-terramycin, using one tablespoonful each to ten of powdered sugar. This operation is repeated every ten days through the build-up period. As a preventive this has been almost one hundred per cent effective.

Most of my requeening is in the spring, using a double screen on each of the strong colonies and running them as two-queen colonies until the beginning of the honeyflow. If the parent colony has not built up to

Black's first spring inspection is to check the dead and dust for disease prevention, repeating every ten days through build-up. He is 100% successful in controlling disease.

Spring work is essential at Hillside Honey Farms. Black feeds the weaker colonies with sugar on inner covers. Helper, Alex McGuire, looks on. Black is a building contractor by trade.

the proper strength then, we remove the double screens hoping the young queen will survive. Part of these nucs are set off from the parent hive in the same yard to make up for winter loss which usually runs about ten per cent, counting the weak ones that have been united. We set these nucs off in the middle of the day so that a large part of the field bees will stay with the parent.

Feeding

We have used dry sugar feed on the inner cover of the colony with good results, continuing right up to the honeyflow. In case of shut in weather, this seems to continue brood rearing and serves to control swarming. An entrance feeder is used on any colonies short of stores. This combination process of requeening and using nucs is done between the 15th and 20th of April. Timing is very important in all operations and an estimate as to when the flow will start, is most important. In this section it is about the first of May. I would rather have a colony build up to the peak five days after the flow starts than to have it build up to maximum strength before the flow starts and lose all the efforts through swarming.

Swarm Control

A young queen is the start of the best swarm control. We usually find the queen of the colony in the top hive body by the middle of April when the two bodies are reversed. This reversal is repeated as often as it is needed to give the queen all the room she needs for maximum build-up. During early fruit bloom and dandelion bloom we add a full-depth super with drawn combs. This serves as a parking space for the young bees and any nectar that may come in.

Production and Marketing

We produce cut comb honey mainly, operating about 150 colonies, located in several different areas. All our colonies are operated with two full-depth hive bodies with about twenty colonies in each yard. All yards are located near farm ponds which provide the water for the young bees.

We use 150 shallow supers for chunk honey, using them between extracting supers on the strong colonies. This seems to give nice combs of honey free from pollen. The honey is removed three times each year.

We are on the rocky, shallow soil of the Eden Shales region and we have a variety of flows which continue from early spring to late fall. Our first surplus flow is from early blooms and mixed clovers. This crop is usually removed about the 15th of July.

Following this, weather permitting, comes coralberry or buckbrush which gives a yield in some years of 50 pounds per colony. It is amber in color and has good flavor. This crop is removed about the 20th of September. Then follows the aster flow which makes up winter stores and some seasons provides surplus, which is removed about the 15th of October.

Honey yield varies due to the condition of our bees and the weather during blooming time. In the past ten years a 30-pound average has been the least and 145-pound the best. About 75 per cent of the honey is sold at our roadside market, located on Highway 421 in Henry County, leading into Frankfort. About 25 per cent is marketed in local stores.

Robert W. Vance,
Of the Younger Generation

by William G. Eaton

Robert Vance represents the younger generation of beekeepers in Kentucky. He comes from a beekeeping family. He says "My grandmother was born in 1846. She was a beekeeper at an early age and continued so until 1926 when the family moved from the farm. My father kept bees also for a while, but with little success."

During these early days many people kept bees as the sole source of sweets, especially during the Civil War when supplies were scarce. Honey and sorghum supplied the table with the necessary "sweetening."

We often read about the need for more young folks to carry on the tradition of beekeeping. If this is true, then there is a great responsibility resting on the older ones to teach, inspire, and create the interest required to enable the youth to catch the vision and get the fever.

Vance is becoming one of Kentucky's most successful commercial beekeepers mainly because of the efforts of his high school principal, who was a beekeeper, and to his neighbor, Morris Black, whose story is on page 406.

(Please turn the page)

Robert and Kathryn Vance have a lucrative sideline. They take great pride in their 2½ lb. comb pack, just what the customer wants.

Buckbush makes a difference in Vance's Henry County location. Flow comes right after clover and sometimes lasts until fall flowers begin.

From a modest beginning with two colonies, the Vance yards now contains 100 colonies divided in six locations, a very rapid expansion indicating good practical management.

Vance runs one-third for chunk honey, two-thirds for extracted, using shallow supers. No sections are used. He and his wife, Kathryn, put up one of the neatest packs that anyone could wish for. Customers come back. Their beekeeping provides the family a large part of the yearly income. However, this year (1959) has been almost a total failure because of adverse weather conditions, but beekeeping in the Vance family continues to be conducted religiously and with great pride.

Management and timing enter into the picture here in Kentucky as it does everywhere. The honeyflows consist of early blooms and mixed clovers, the all-important buckbush during midsummer, followed by goldenrod and asters for fall and winter.

The Vance operation contains no tricks, just plain hard work and—timing. His yards are located with farm ponds near and with good windbreaks for winter protection. He runs the bees on the double brood chamber two-queen plan, using double screens for divisions and rotating requeening so every colony is requeened with the best stock every two years.

U.S. Highway 421 provides Vance with the main outlet for sales since his home is located by the roadside in Henry County. It is an excellent example of roadside sales providing better prices by 20 per cent than the usual wholesale or producer-to-customer outlets. Actually two-thirds of the crop is disposed of at the roadside market operated by the family. It is many times left for self-service and has proved to be successful and honest for all concerned.

Vance is in an area where diversified farming must be followed. It is different when compared to the blue grass areas where the income is derived not from bees to be sure but from fine seeds, cattle, sheep, some swine, and lots of burley tobacco.

So, Vance cannot rely on any one thing. He has to plan for several things which he does in this manner. He has a herd of beef cattle, runs several acres of strawberries, has his fine beekeeping enterprise and manages to have a fine lot of hogs. He has also attempted the pollination of 1,000 acres of legumes. The Vance family, as indicated, carries beekeeping as a family enterprise. They follow local and state activities religiously. They travel and talk bees with the best beekeepers they can find and many times national meetings will find them right in the midst of activities.

So learning to keep bees is a gradual and continuous process, as well as a profitable source of income for a family. They also are interested in antiques, old coins, old beekeeping journals.

What is the secret of successful beekeeping? For this young man, I would say it is first, a tremendous love for bees and a fine sense of management. Add to this the buckbush flow which comes when the majority of bees in Kentucky are loafing and eating up the profits. It provides the necessary forage between clovers and fall flows.

We have all heard the expression: "Love me—love my horse." With the Vances it is: "Love us, love our bees. Come to see us for the latch string is always on the outside."

A Unit of Bees Via Television

Reported by Raymond Layne
Edited by William G. Eaton

Mr. Layne submits the following factual report concerning the classroom unit which he teaches each spring on bees and beekeeping. Formerly, the unit was taught at the Valley Station High School. Now it is being taught via television over Station WFPK-TV, Channel 15, Louisville, Kentucky.

"Only three days were allotted to the teaching of bees on television to our general science classes. It was fitted into the unit on living things in the spring. When we got to *Insects*, in the study of Zoology, bees were emphasised as an example of the social insects. Of course three 25 minute periods is not long enough to teach a great deal about bees and beekeeping.

"The first day was devoted to teaching about bees as insects. The second day was used to discuss bees as an important economic factor in agriculture and in the pollination of flowers. Honey and wax production was one phase which was also stressed while the value of pollination was being discussed. The third day was used as a demonstration period, with Mr. Earl Edelen, of Guston, Kentucky, serving as our commercial

Teacher Raymod Layne, showing drawing and discussing kinds of bees in a hive.

Students follow up telecast. Telecast is 25 minutes with 25 minutes for followup.

beekeeping guest. Mr. Edelen is Superintendent of the Bee and Honey Department of the Kentucky State Fair. This demonstration served to explain the use of equipment as well as a question and answer period concerning some of the vital and most important points which we had covered in the preceding lecture periods.

"The highlight of the series actually came at the close of the second day's lesson, when I buttered a hot biscuit and then poured liquid honey on it and ate it in full view of our viewing audience. Reports coming in from the classrooms indicated that there was much groaning and drooling at this point!

"On later visits to the classrooms, I was asked more questions about bees than any other topic which had been discussed. Many students expressed the desire to stay on the subject for the remainder of the week. Several teachers and pupils made inquiry as to the availability of honey for home consumption. Bee equipment suppliers reported an immediate increase in inquiries and sales of beginners' outfits and supplies.

"In conclusion, I feel that I was able to interest the pupils and to impart to them the essential and basic information concerning bees and the art of keeping bees as a hobby or as a vocation."

Tennessee

by L. H. LITTLE
State Apiarist Shelbyville

Although Tennessee is not considered favorable for commercial honey production, there are some sections where several commercial beekeepers are located and their average yield under normal conditions is well over one hundred pounds per colony. However, to get this average requires from one to two moves during the season.

In central Tennessee, the flow comes rather early from black locust and crimson clover, followed by vetch. This flow lasts from about April 25 to June 20. During the last few years white Dutch clover has increased, and with plenty of moisture during May and June, it is possible to get a continuous flow until August 1. However, most commercial beekeepers move their colonies about June 20, either to the mountains of the eastern part of the state for sourwood, or to the cotton and soybean areas in the western section of the state.

From the Tennessee River westward, there is quite a variety of nectar secreting plants. In early spring there are numerous minor sources of nectar plants which produce no surplus honey but are excellent for an early build-up in colony strength which is necessary for the early locust and vetch flows. The western part of the state is at least ten days earlier than the central section and about twenty-one days earlier than the eastern section. This, no doubt, is due to the vast difference in altitude.

Tennessee is not a large honey producing state, but ranks high in number of beekeepers, with over twenty thousand who own about one hundred sixty-five thousand colonies of bees. This indicates that quite a lot of beekeepers have only a few colonies which they keep for several reasons; as a hobby, for pollination of fruits, seed crops, and vegetable gardens and to produce honey for home use or additional income. Of all our beekeepers, fifteen own five hundred or more colonies; fifty own from one hundred to five hundred colonies; one hundred own fifty to one hundred colonies and the rest average five or six colonies. All of these expect some income from the sale of honey.

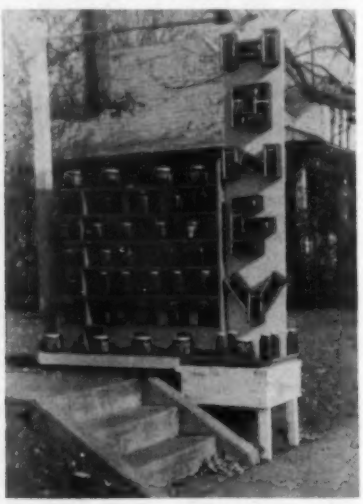
C. L. McGehee, President of Tenn. Beekeepers' Association, presents first free membership certificate to 4-H club member. The Association encourages young groups with free memberships when they have bees as a project.

(Please turn the page)

One best way to get the value of bees over to public is with fair displays. This display at State Fair won first prize as an educational booth.

Officials cooperate with beekeepers. Here are President McGehee; Frank Clement Commissioner of Agriculture; Gov. Buford Ellington; Vice-President McClanahan and L. H. Little, State Apiarist and Sec.-Treas. of State Association.

Ransler Barnes, Cosby, of Rich Mountain Apiaries, specializes in queen rearing. He produces about 5000 queens each season.



Roadside stands advertise honey. Hundreds of pounds are sold right at the front door. This is at Cowan.

Type and quality of honey produced varies considerably. About 75 per cent of all honey produced is as chunk comb. Shallow supers are used almost exclusively. The flow in most cases is of too short duration from any one source to make section comb honey desirable or profitable.

MARKETING:

Seventy-five per cent of all honey produced in Tennessee is marketed by the producer to grocery stores, including commercial beekeepers who sell to chain stores, while the other twenty-five per cent is sold retail directly to the consumer at roadside honey stands and curb markets. I know of no beekeeper who sells to a commerical honey packer.

It is seldom you find a beekeeper who has honey on hand after December 31. So marketing is not a problem in Tennessee at present. We consume about four times the amount of honey we produce. The above marketing methods give the beekeeper a much better price than the national average.

QUALITY:

The limestone areas of central and east Tennessee produce a fine quality honey of light to dark amber color, or water white color in some seasons, from vetch and white Dutch clover. In the mountain area the color of the honey sometimes is very dark but of good flavor. This honey is sold to tourists, bakeries and local trade. Sourwood, when pure, is very light in color and of very fine quality. Seldom do we get pure sourwood because of the vast number of other plants yielding at the same time, resulting in a dark colored honey but with the sourwood flavor.

West Tennessee also has areas where a fine quality, light colored honey is produced. Cotton on lowland usually yields well but this is not considered table grade honey. Cotton on uplands produces a light colored, mild flavored honey. Perhaps the most objectionable thing to cotton honey is the rapid granulation. It has been known to granulate in the comb while still in the hive. The granules are very large and hard and damage the combs in some instances.

The western section also has quite a lot of white Dutch clover, sweet clover and soybean, all of which produce a good quality honey.

COMMERCIAL QUEEN BREEDING:

At present, we have only a few queen breeders who produce queens for sale. Several beekeepers raise their own queens and some sell a few locally.

EXTENSION WORK:

The only extension work being

Competition among well organized beekeepers is keen. This Apiculture Building, one of the few in any state, houses the beekeeping exhibits of Cocke County during the fair.

Apiaries like this are seen throughout the state; placed on farms for the pollination of various crops.

done at present is by the State Department of Agriculture through the Apiary Inspection Service. During the winter months when inspection is not possible, the State Apiarist and his six fieldmen hold beekeeping short courses throughout the state. We have found that this work has been of much help in our disease control program. Many hobbyists are not familiar with bee diseases and proper management of bees. These two subjects are taught in every short course.

STATE AND COUNTY ASSOCIATIONS:

Some twenty counties have active beekeepers' associations. These are all affiliated with the state association which has, at present, a membership of more than six hundred. Each month members receive "Tennessee Apiculture," which contains timely articles and information on proper management of bees.

FUTURE OF BEEKEEPING:

The future of beekeeping in Tennessee is most promising. Many young 4-H, FFA, and other youth organizations have beekeeping as their projects. They are given free membership in the state association until they finish high school or discontinue their projects. Much interest has been created through this offer. We expect a greater increase in youth participation in the future.

Beekeeping in Virginia

by H. L. Maxwell

(Continued from page 401)

from 100 to 200 and include Ludlum, Burgess, Zastrow, Blanks, G. C. Maxwell, Weatherford, etc. There are a few small apiaries in the Charlottesville area, with 200 colonies owned by Boothe. Several small apiaries in the Tidewater area and in the vicinity of Richmond. Probably all the bees mentioned will not produce much over 200,000 pounds of honey commercially in a good year.

They sometimes go four or five years without a crop of sourwood and their main yield is from weed sources, tulip poplar and honeydew. The elder Asher kept bees for 50 years in central Virginia, and his stock comment was that he never made any money in the bee business.

There are only a few important lots of bees in the Shenandoah Valley. The writer operates some 50 apiaries in Virginia and West Virginia, totaling about 2500 colonies. The Bass' operate about 1300. There are four or five other lots of 100 to 200 and several single yard owners of 50 colonies each.

Most of the production of honey is packed and sold by the producer in his own area. Very little honey is shipped out of the state. To my knowledge I am the only one who has ever shipped a carload of honey out of Virginia and such occasions are few.

Beekeeping is on the decline from the commercial standpoint except in a few instances where the operator is a youngster who has newly acquired the bee fever and who probably has sub-normal ability in any case. With expanding industry, and the post-war boom, it is too easy to earn a good living in more refined pursuits. With the increasing use of insecticides also in the few remaining areas where beekeeping is commercially applicable, the prospect is for continuing decline of beekeeping on a commercial level.

PLANT AN EDIBLE WINDBREAK

Extra equipment may be used as a windbreak while the planted one is growing.

We all know the importance of a windbreak around our bee yards and those we plant are so much more satisfactory than snow fences, corn stalks or other non-permanent helps for bee wintering. So, if you do decide to plant a wind barrier this spring, why not plant one that will let you harvest berries or fruits to pay for your labor of planting? Many have possibilities, but some of those listed may work out better in some areas than in others, so it may take a bit of investigation and experimentation for the beekeeper to find just what he wants. This small list may hold the answer. If not, the nursery catalogs contain a wealth of varieties suited for all types of soils and conditions.

In New Jersey the Native Persimmon (Diospyros Virginiana) is a rapid grower well suited to almost any type of soil and produces early which is a consideration if you intend planting this windbreak on some one else's land. It is easily and cheaply grown from seed if you have a bearing tree that you can collect the fruit from.

If you decide to plant the seeds in the bee yard in their permanent position, they should be planted about six inches apart and lightly covered with soil or sand in the fall. They will usually germinate in the spring

Beach plum forms a windbreak for this yard.

This yard is in need of a windbreak.

as soon as the soil becomes warm. If you get a good stand, they can be thinned out the second year and the transplants taken to another yard, or choice seedlings may be taken home for tree planting, since in time they will make an attractive shade tree. They should be left growing every twelve or eighteen inches apart and the tops topped off the second year to cause a thicket to grow on the north side of the yard. If the soil is dry, they should be mulched with leaves, straw, or weeds the first two years. After that they will take care of themselves, giving the beekeeper a harvest of this astringent fruit. Some seedlings will bear the fourth year and with these seedlings the fruit varies in size and color, but enough good ones will be found to delight the beekeeper who likes this rare fruit.

There are many named varieties with fixed characteristics for the discriminating beekeeper for sale at various nurseries and if you wish to be even fancier, the ornamental Asian varieties such as Eureka, Tani-Nashi, Fuijami and others can be obtained from those companies that specialize in persimmons.

For acid soils the beach plum (Prunus maritima) is a rapid grower and can be easily grown from seed or hardwood cuttings, or budded on wild plum stock. Until you have tasted beach plum jam made from these dark purple beauties, you just haven't tasted jam at its "bestest."

These plum trees, which never amount to more than high bushes, can often be obtained on the sand dunes of Atlantic Ocean beaches from New England to Florida, and transplant easily into any acid soil that will grow evergreens.

Many nurseries are now featuring hybrid plums, of all descriptions, some with ornamental foliage, some with desirable fruits, some with attractive blossoms. Many are very cheap and will make a very desirable windbreak, fast growing with dense growth and choice fruit to eat or for making jam in late spring.

Some seedsmen list "cherry-plum" hybrids that make good growth and bear luscious fruits. Planted closely, these will make fine windbreaks. "Oka" is the trade name of one of these that has proved itself for one beekeeper in our area. "Sapa" is another good one. "Compass" is another.

The so called "bush cherries" are now coming into their own as edible windbreaks in this area. Perfectly hardy, as yet unaffected by insects, and offering bumper crops with no care, at the same time they offer a dense hedgelike growth to shelter your bees from the north winds. Growing only 5 feet tall, the Korean Bush Cherry (Prunus Japonica) is one of these. It will bear an abundance of large rich cherries the second or third year after planting.

The Nanking cherry (Prunus Tomentosa) will grow to about ten feet and has beautiful white blossoms from top to bottom in early spring. It is also an every year producer of large red cherries that make a wonderful pie or can be used in many other ways. All the nursery catalogs offer many varieties of this plant. Some of the hybridized plants are more expensive to buy, but they offer more cherries and greater winter hardiness.

Probably the cheapest bush cherry to buy from a nursery is the Hansen bush cherry which is an old favorite in this area. It grows about 4 to 5 feet high and bears fruit the second year after planting.

For an inexpensive fruit bearer perhaps none can compare with the wild black cherry (Prunus serotina). Its only fault in this area is its susceptibility to the tent caterpillar, which will defoliate the tree and hinder it from bearing some years unless it is sprayed. However, these pests never seem to kill the tree and it will come back the following year with a bumper yield of those tart berries that are favored by those beekeepers who like to make "wild cherry-honey" wine.

The choke cherry (Prunus virginiana), native to some states, will make a desirable windbreak and is a joy to behold with its spicy fragrant flowers. It is unpopular in this area and has been destroyed to a great extent since it is accused of harboring the Elm bark beetle, which has been responsible for spreading the Dutch Elm disease.

The June berry, or Service berry (Amilanchiert), is a compact bush that produces an abundance of fruit for jams and jellies. It makes a beautiful hedge for the home or bee yard.

Though not a native of this area, the Buffalo berry (Shepherdia argentea) has been brought in to make a wonderful bee yard plant. Its great clusters of edible berries hanging amongst the silvery leaves make a sight a visitor to your bee yard will never forget.

For northern climes the very hardy sand cherry (Prunus Pumila) yields fruit and will offer a thick low windbreak though the soil be poor and very sandy.

There are many others, all a joy to see in bloom and to harvest and all the time offering shelter for your bees from the bleak winter weather. New Jersey.

Honey Ice Cream at Illinois State Fair

The Illinois State Beekeepers' Association, and particularly Messrs. Leiper and Killion, tried a new approach at the Illinois State Fair. Both to publicize honey and to make some funds available for the Association, they promoted and actually WORKED at selling honey ice cream at a booth near the honey display.

Not only was a nice profit realized but there is no doubt that a fine feeling for honey and its products was created during the 10 days of the Fair.

Farm Seed Prices Lower

U.S.D.A. reports that farm seeds yielded lower prices to the grower in the spring of 1959 than a year earlier, and that includes the legume seeds like the clovers, so valuable to the beekeeper. May this perhaps induce the use of more clovers in the rotation on farms in general?

National Honey Packers Subscribe to Check-off Plan

We are quite pleased and happy to receive the news that Harold J. Clay, formerly of the Department of Agriculture and so well known to beekeepers everywhere, is now Assistant Secretary-Treasurer of the National Honey Packers and Dealers Association. In a letter to all U. S. honey packers and dealers, he reports probably more than an average crop of honey and urges all packers and dealers to adopt the Check-off plan in all their purchases of honey. Anyone desiring further information should write directly to Harold J. Clay, 2603 Monroe Street N. E., Washington 18, D.C.

Overwintered Colonies Protected by Fumidil-B

by Herbert J. Tepper

I keep bees only as a side line. They are located about 100 miles northeast of here near Appleton, Wis. Last fall on the weekends of Oct. 18th and 25th I fed my 144 colonies two gallons each of medicated sugar syrup. It was mixed as recommended, i.e., one large bottle of Fumidil-B (9.5 Gm) dissolved in one gallon of water and then added to 100 gallons of 2:1 sugar syrup. The colonies took the syrup readily out of division board feeders.

My hive bodies are twenty inches square and 6 5/8 inches deep. I wintered the colonies in three of these wrapped in black building or silo paper. On top above a screen I put two burlap bags and then the cover. There was an upper entrance, and the bottom entrance was reduced. The average gross weight of the hives was approximately 175 lbs.

As everyone will recall, this past winter was one of the longest and coldest in this region on record. When I unpacked the colonies on the weekends of May 9th and 16th, I was pleased to discover only 8 dead out of 144 with an additional 7 weak. But these, I believe, can still be built up for the main honeyflow. A number were so strong that they were already starting swarming cells at that time. The average colony covered 7 or 8 frames in two hive bodies and still had plenty of honey left.

Thus this was a loss of only 5 to 10% at a time when many beekeepers here who did not feed Fumidil-B were struck with a loss of 25 to 50% and more. And most of their colonies that did come through were weak. Consequently they had to spend a lot of money for packages.

I used Fumidil-B in the like amount the previous year, but the results were not so spectacular because the winter was rather mild. Almost everyone's bees came through well then.

Apparently then, the greatest value from Fumidil-B in overwintered colonies is realized in the most severe winters.

Wisconsin

Colony and Plant Conditions

As of July 1 the U. S. Department of Agriculture reported about the same number of colonies in the country in both years, 1958, 1959, approximately 5,425,000 colonies. Condition of colonies as of July 1 was 86 per cent compared to 88 per cent last year, while nectar plants were 77 per cent as compared to 84 per cent last year.

Industry.....

Edited by
ROBERT BANKER
Cannon Falls, Minn.

Acarine Mite Reported in U. S. Bees

A consignment of one queen bee and attendants originating from northern California and consigned to Australia was found upon arrival to be infested with mites which were reported to be *Acarapis woodi* (Rennie).

Australian quarantine officials advise that "the infestation as determined by the examination under quarantine comprised three mites found on one escort. *These occurred on the thorax without any apparent diseased tracheal condition.*"

This is the first report of *A. woodi* in U. S. bees. However, a subspecies, *A. woodi externus*, which is easily mistaken for *A. woodi woodi*, was found in Quebec in 1926. It is not known which subspecies has been intercepted in Australia. Specialists at the Commonwealth Institute of Entomology in London, England, where the identification was made, have informed California authorities by cable that the three mites sent to them from Australia were determined "as falling in biometric overlap of subspecies *woodi* and *externus*."

As its name implies, *A. woodi externus*, lives externally upon infested bees, *causing no apparent disease*. Whereas, the subspecies, *A. woodi woodi*, infests the tracheae (breathing tubes) of honey bees, causing a diseased condition known as Isle of Wight or Acarine disease.

Drones, workers and queens may be affected. The presence of the mites does not inevitably cause the death of the colony. The rate of reproduction and spread of the mite may be slower than the increase and changes in make-up of the population of a strong colony during the spring and summer. The colony, under these conditions, may overcome the infestation. This situation is most likely when only one or a few bees are initially infested. If large numbers of bees become infested through robbing, drifting or hive manipulations, the colony may be quickly weakened and killed. Colonies infested in the fall will usually die the following spring or before.

The disease causes heavy losses of bees in various countries in Europe and the British Isles. It has more recently been reported from Argentina, Uraguay and India.

The Honeybee Act of 1922 was passed by Congress to protect beekeepers of this country from this most serious disease by restricting the importation of live bees into the United States. At present, Canada is the only country from which such bees are allowed entry.

The presence of an infestation of *A. woodi* in Northern California has not yet been confirmed. The 200 double-nuclei, known to have been present in the mating yard from which the infested shipment originated, have been located. These nuclei are no longer together at the same apiary, but have been traced by means of "celling" dates to four locations in two adjacent counties within California.

No symptoms of Acarine disease have been apparent in any of these colonies this season. The presence of mites in the tracheae shortens the life of an infested bee, gradually weakening it until the bee can no longer fly. This causes many bees to die in the field. Normally, in a heavily infested colony, affected bees can be found crawling in front of the hive, unable to fly, especially after a period of confinement to the hive.

Samples of bees have been examined from each of the suspected nuclei, as well as from colonies which have received surplus bees or queens from these nuclei during the season. Each sample consists of 15-35 bees of foraging age or older. This gives a 50/50 chance of discovering a 2-5% infestation of *A. woodi*. The samples have, for the most part, been hand-collected in order to secure suitable diagnostic material.

Each bee in every sample has been individually dissected to expose the tracheae, which were then carefully examined for signs of mite activity under a 20x binocular microscope. Questionable tracheae were transferred to slides and examined under a compound microscope at 100-140x magnification.

Since receipt of the Australian report, 571 samples (about 17,000 individual bees) have been captured, dissected and examined in this manner with negative findings. This represents all of the nuclei in question as well as the closely associated colonies.

The results of these investigations would seem to indicate that the mites in question were *A. woodi externus* rather than *A. woodi woodi* as has been commonly supposed in recent Australian publications regarding this discovery.

Investigations are being continued. If it is discovered that Acarine disease exists in California, immediate action will be taken at county, state and federal levels to determine the extent of the infestation, to prevent its spread and to evaluate the opportunities for eradication, in order to protect North American beekeepers from this most dreaded pest of bees.

Homer Len Foote
Dept. of Agriculture
State of California

The Federation

Secretary Joseph O. Moffett
115 So. College Ave., Fort Collins, Colorado

The varied nature of the Federation is well illustrated in the past month. In Michigan the National Honey Show was held at the Michigan State Fair. In Arizona, Clarence Benson was planning and working out the details of the January convention at Phoenix.

Elsewhere the enabling act was being discussed. The semi-monthly newsletter was published at Fort Collins. The honey queen committee was working on the queen contest.

Honey queen publicizes honey. Kay Seidelman, the national honey queen, has appeared at several fairs in Michigan recently. She rode in several parades at these fairs. At some of these parades she is surrounded by six little children dressed as worker bees.

She will be in the State Fair parade at Detroit, as well as at the honey display at the National Honey Show. Kay has been the subject of several newspaper articles and TV stories.

States encouraged to send queens. A honey queen will be chosen at Phoenix. Many states are choosing a queen and planning on sending her to Phoenix to compete in the national contest. Some states require their queen to know a lot about bees and the honey industry. This is good, as to be effective, the queen must know how to talk about bees and honey.

Rules announced for queens. The honey queen committee has announced the following rules will apply in the contest:

1. Age limit 17 to 22 (must be 17 before January 1, 1960).
2. Contestant may compete more than once, but not in consecutive years.
3. Contestant must be single, and may not marry during the year of her reign as American Honey Queen.
4. Each contestant is to supply the honey queen committee chairman with a brief biography accompanied by a billfold-size glossy picture at least ten (10) days before the convention.
5. The contestants are to arrive at the convention hotel by 8:00 p.m. the evening preceding the auxiliary meeting for final instructions.
6. The sponsors will be responsible for the expenses of their queen to and from the convention, as well as her expenses at the convention.

Insecticide loss. More than ½ the beekeepers returning cards in the Federation's market survey, reported some loss from insecticides. The worse case reported was from Arizona, where a beekeeper lost 150 colonies and had 700 damaged.

Be the 1,000th member. The 1,000th 1959 member will be the subject of a short article in the Federation Newsletter. We should reach this number before the next Bee Journal is out. Join the Federation now! Ask your fellow beekeeper to join. Dues are 4c a colony with a minimum of $3.00.

Editorial

Domestic Beeswax Looks Forward to Better Times

Recently an agreement was reached between virtually all manufacturers of bee comb foundation not to use anything but pure beeswax and separable materials, such as wire, in the manufacture of foundation. These manufacturers further agreed to advise the Bee Industries Association should they ever desist from this practice.

Prior to the signing of this gentlemen's agreement, the domestic beeswax industry faced a very serious situation. To strengthen the beeswax foundation sheet, several manufacturers had for years added higher melting point waxes. This practice had reached a point where certain manufacturers were adding high percentages of low priced petroleum wax. Crude domestic beeswax from old comb sources found itself begging for a market as a result of this. The price structure for such wax was endangered.

This problem came to light at the last meeting of the American Beekeeping Federation at Tampa, Florida. At that time, A. Baxter C. Woodman, chairman of Bee Industries Association, volunteered to attempt to get all comb foundation manufacturers to agree to desist from the addition of inseparable waxes or waxlike compounds. Baxter Woodman spent much time and effort to accomplish this. We heartily commend him for his leadership and persistence which has resulted in an agreement that can mean much good to beekeepers of this country.

Another outcome of this endeavor is that Dr. Jonathan White, Jr., who is in charge of honey investigations at the Philadelphia Laboratory, has offered to make a study of the physical and chemical constants of United States beeswax. Samples of old comb and cappings wax presently are being collected for this study. It is planned that this study will result in better, specific tests for known adulterants of beeswax, and to establish better and closer tolerances for United States beeswax.

The American Bee Journal regards all of this as an important step forward for the beekeeping industry of this country.

Science . . . .

EDITED BY DR. WALTER ROTHENBUHLER, Iowa State University

Poisoning of Honey Bees by Death Camas Blossoms

by J. D. Hitchcock

Entomology Research Division, Agr. Res. Serv., U.S.D.A.[1]

There have been rare reports of severe losses of honey bees (*Apis mellifera* L.), presumably poisoned by death camas blossoms, in Utah (Perrins 1933) and Idaho (Hancock: private communication). This plant, *Zygadenus venenosus* Wats., also has been listed as poisonous to honey bees in California (Vansell and Eckert 1941, Eckert 1949), Oregon (Scullen and Vansell 1942), and possibly other western states (Burnside and Vansell 1936, Pellett 1947). Death camas is known to contain alkaloids (Reid and Smith 1956) capable of causing severe poisoning and even death of sheep, cattle, and other livestock (Forest Service 1937, Muenscher 1947). The bulb, stem, leaves, blossoms, and seeds are known to contain the poisonous alkaloids, but apparently it has not previously been determined experimentally whether the pollen and nectar are poisonous to bees.

In tests at the Laramie, Wyoming, Bee Culture Laboratory in 1956 and 1957, when honey bees were confined with bouquets of death camas in screened cages, the bees were observed to search the flowers with outstretched tongues but pass rapidly from blossom to blossom as though finding little if any nectar. After about 9 hours many of these bees were observed on the floor of the cages, writhing on their sides, bending their abdomens under their thoraces, or dragging their hind legs as if partially paralyzed.

As shown in Table 1, honey bees of unknown ages caged with death camas bouquets died more quickly than their sisters caged simultaneously with bouquets of white top (*Lepidium draba* L.), a small-flowered, nonpoisonous weed in bloom at the same time. In some tests bees caged with death camas died more rapidly than their sisters fed water only, or even faster than those completely starved. All bees caged with death camas died within 2 days, and their average longevity was less than 1 day. Their sisters fed sugar sirup showed 0.5-4% mortality in 2 days and had an average longevity of 15-16 days. These results indicate that the bees caged with death camas died of poisoning rather than starvation.

The loose pollen was shaken from racemes of death camas, and these were then centrifuged by the technique developed by Swanson and Shuel (1950). Even with repeated centrifuging of fresh racemes, the quantity of nectar obtained was scarcely more than enough to moisten the small amount of pollen thrown down. In the 1956 tests the nectar was extracted and diluted with water, after which the supernatant was removed and evaporated to a volume of 2 ml.[2] It may have contained a trace of pollen. In the 1957 tests the nectar was diluted with sugar sirup and was filtered through cotton to remove the pollen, leaving a volume of 2 ml. These small volumes of diluted nectar fed to caged bees caused at least 99% mortality in 16 hours (Table 2), whereas the control bees lived an average of 26-33 days. It was possible that the nectar-fed bees died of starvation, but the fact that sister bees fed only 1 ml. of sugar sirup showed only 3% mortality in the same period indicates that the nectar was poisonous. However, it is possible that the centrifuged nectar absorbed soluble toxins from the pollen.

When death camas pollen from 200 racemes was shaken by hand into a glass beaker, and then suspended in 20 ml. of sugar sirup and fed to newly emerged caged bees (Table 2), they showed 89% mortality within 16 hours and complete mortality within 48 hours, whereas their sisters of identical age fed sugar sirup without pollen showed no mortality within 2 days and had an average longevity of 33 days. This demonstrates that death camas pollen definitely is poisonous to honey bees.

Fortunately, death camas blooms only for about 10 days in early spring. It secretes relatively little nectar, so that honey bees are not likely to be attracted to it unless no other nectar sources are available. As the pollen is comparatively dry, and the pollen grains are very small, averaging only

[1] In cooperation with the University of Wyoming. Wyoming Agricultural Experiment Station, Journal Paper No. 113.

[2] By H. F. Eppson, University of Wyoming.

Table 1. Mortality and longevity of sister worker honey bees of unknown ages confined in screened package shipping cages with bouquets of death camas or white top or without food.

Food	Number of bees caged	Percent mortality after— 24 hours	48 hours	Longevity (days) Average	Maximum
		1956 Tests			
Death camas: 6 hours old	333	96	100	<1	2
½ hour old	270	100	0	<1	1
White top: 1½ hours old	372	56	100	<1	2
Water: (In feeder tin)	340	70	100	<1	2
(Soaked cotton)	199	100	0	<1	1
No food or water	214	100	0	<1	1
Sugar sirup (20% sucrose)	372	0.5	0.5	14.5±4.1	23
		1957 Tests			
Death camas: ½ hour old	189	89	99	<1	3
White top: 1 hour old	158	13	88	<2	5
Water: (In feeder tin)	185	44	100	<2	2
No food or water	119	63	100	<1	2
Sugar sirup (20% sucrose)	169	2	4	15.9±6.8	30

Table 2. Mortality and longevity of sister worker honey bees in small screened cages provided with death camas nectar or pollen or sugar sirup.

Food (in addition to water)	Number of bees caged	Age of bees at start (days)	Percent mortality after— 16 hours	48 hours	Longevity (days) Average	Maximum
		1956 tests				
2 ml. dilute death camas nectar in water	103	Unknown	99	100	<1	2
Sugar sirup (20% sucrose) *ad libitum*	44	Unknown	0	0	25.6±6.0	35
		1957 tests				
1 ml. dilute death camas nectar in 20% sucrose	103	6 - 8	100	—	<1	1
1 ml. sugar sirup (20% sucrose)	101	6 - 8	3	9	<3	4
Death camas pollen in sugar sirup	101	0 - 3	89	100	<1	1
Sugar sirup (20% sucrose) *ad libitum*	100	0 - 3	0	0	32.8±14.4	72

about 17 x 41 microns, it is possible that death camas is primarily wind-pollinated. The plant seldom is abundant in commercial beekeeping areas. If beekeepers suspect that it is poisoning their bees, they should move their colonies out of range of death camas during its blossoming period.

It is a curious fact that a solitary bee, *Andrena zygadeni*, originally described by Cockerell (1932) in California but also recorded from Utah (Muesebeck *et al.* 1951), has been collected only on death camas blossoms. G. E. Bohart (private communication) states that this and certain other solitary species of bees appear to specialize on this plant without showing any ill effects. This presents an interesting physiological problem as to how these bees avoid being poisoned.

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Value of Honey in Pharmaceuticals

Research by the Philadelphia College of Pharmacy and Science, on contract with USDA's Agricultural Research Service, shows that honey is a valuable vehicle for certain medicinal preparations. It improves the palatability of many medicines with its flavor. Also medicines in honey preparations settle very slowly and can be resuspended by moderate shaking. For tonics, cough medicines, and some vitamins, honey solutions are entirely stable. For other vitamins, stability is limited to 2 or 3 weeks, and for aspirin several days. Ferrous sulfate sirup, a popular iron tonic, usually made in sugar sirup flavored with peppermint, can be made with honey as the sole flavoring agent. It is stable, exceptionally palatable, and free of the astringent after-taste of most preparations containing iron.

Sulfa drugs are usually marketed as liquid suspensions. Experimental preparations in suspensions mostly of honey were preferred by taste panels over other commerically available preparations. They also were completely stable, slow to settle, and easily resuspended.

Cough preparations with antihistamine agents and codeins, and also a terpin hydrate elixir that is a widely used cough remedy, were made in palatable and stable forms with honey. The research showed too that medicinal products prepared with honey and containing water can be completely preserved from microbiological degradation by the addition of sorbic acid to the honey solutions.

This study was sponsored by the ARS Eastern Utilization Research and Development Division, Philadelphia, to encourage a wider use of honey.

Meetings and Events

Texas State Fair, Dallas, Oct. 10-25

The State Fair will be at Dallas, Oct. 10-25 and the Texas Beekeepers' Association booth must be in place by 4:00 p.m. on Oct. 9th.

Texas Annual College Station, Nov. 9-10

The Texas Association annual meeting will be at College Station, Nov. 9th and 10th.

Illinois State Fair Awards

First for best display of comb honey W. J. Ghere, Centralia. For comb honey collection, H. E. Dale, Herrin. For extracting comb of honey, William Wallanches, Downers Grove. For comb of white honey for cut comb, William Wallanches. For comb of amber honey for cut comb, W. J. Ghere. For white section comb honey, W. J. Ghere. For amber comb honey, H. E. Dale. Light extracted honey display, Willard Smith, DeLand. Designs in comb honey and comb building, William Wallanches. For a variety of honey in various containers, William Wallanches. Display of amber extracted honey, W. J. Ghere. For one frame observation hive, 3-banded Italians, H. E. Dale. Same for Golden Italians, Willard Smith. Same for bees other than Italians, Willard Smith. Chunk honey in glass, Willard Smith. Display of beeswax, Robert Hathaway, Manhattan. Art design in beeswax, Willard Smith. Educational demonstration and honey gift package, William Wallanches. Best display booth, W. J. Ghere. American Bee Journal Sweepstakes, William Wallanches.

Governor's trophy to W. J. Ghere.

National Honey Week Oct. 26-31

Remember the date and get in touch with the American Honey Institute for information and available display and advertising material. Address American Honey Institute, Madison 3, Wisconsin.

Florida Annual, Tampa, Oct. 22-23

The Florida State Association will hold its annual meeting at the Hillsboro Hotel, Tampa, Oct. 22-23. Reservations should be made by writing to the hotel. Anyone interested in beekeeping welcome.

F. A. Robinson
Secretary

Tennessee Annual Chattanooga, Oct. 15-16

The Tennessee Beekeepers' Association annual meeting will be October 15 and 16 at the Patton Hotel in Chattanooga. Many outstanding speakers from out-of-state have been secured and the largest attendance ever is expected.

The Chattanooga Area Beekeepers Association, with a membership of one hundred, will be the host. This is a wonderful time to take a little vacation and see some of the beauties of nature; the trees of the mountains will show their autumn color.

Chattanooga lies at the foot of Lookout Mountain. The world's steepest incline will offer you a thrill of a lifetime when you ride from the city to the top of the mountain.

Nebraska Honey Producers Lincoln, October 29th and 30th

The Nebraska Honey Producers, Association will hold its annual meeting on Oct. 29th and 30th at the Agricultural College, Lincoln. Thursday, the 29th, will be the main meeting and Friday, the 30th, will be beginners' day. A full program is being arranged and all beekeepers are welcome. Several controversial issues will be up for discussion and a good attendance is hoped for. The banquet, with the crowning of the State Honey Queen, will be Thursday evening, the 29th.

Charley Moosman
President.

Middlesex County (Mass.) Waltham, Oct. 24th

The Middlesex County Association will hold its first indoor meeting and Annual Banquet at the Waltham Field Station, Waltham, on October 24 at 6:30, with a honey and wax contest.

All reservations for the roast beef dinner with banana fritters must be made in advance to Richard W. Corrigan, 946 Main Street, Reading, Mass.

Al Baptiste, chairman of the honey and wax contest, will award prizes by classes.

A series of very good outdoor meetings has been enjoyed this summer with demonstrations of handling bees and proper manipulation of hives.

M. Southwick, Corres. Sec.
176 Waban Avenue, Waban, Mass.

Manitoba Annuals Nov. 12-13

Dates to remember. Manitoba Association convention and annual meeting of the Manitoba Cooperative Honey Producers, Nov. 12th and 13th.

Connecticut Fall Meeting Hartford, Oct. 24th

The Connecticut Beekeepers Association will hold its fall meeting Oct. 24, at the Y. M. C. A. Hartford, located at the corner of Jewel and Pearl streets. The meeting time is 10 A.M. The speaker for the day will be Mr. Eugene Keyarts, Madison, Conn. The talk will be about bee hunting and the life of the bee in the hive. A number of colored slides will be shown to illustrate the narration. Lunch will be in the Y. M. C. A. cafeteria. A welcome is extended to beekeepers and visitors to attend this meeting as the pictures are wonderful.

Philemon J. Hewett, Jr.
Publicity

Southern States Beekeeping Federation Valdosta, Georgia, Nov. 9-10

The Southern States Beekeeping Federation will hold its annual convention in Valdosta, Georgia, November 9-10. The meeting will be at the Ashley Oaks Motel, one of the finest in the South, which offers every convenience for those attending. Registration will begin on Sunday, November 8.

Efforts are being made to make this one of the most interesting SSBF conventions yet to be held. A complete program for hobbyists and small beekeepers has been planned, with extension bee specialists from all Southern states giving talks and demonstrations. For commercial beekeepers, a special effort is being made to accent new discoveries in the field of scientific beekeeping that promise to lead to greater and more economical production.

Plenty of rooms will be available at the Ashley Oaks Motel, and meetings will be held in the motel's large banquet room. Those expecting to attend should try to inform the motel as soon as possible so the management may estimate more closely the number of rooms to keep open for beekeepers.

Eastern Apicultural Society

TOP LEFT—Dr. J. W. White examining honey at the Third Annual Honey Show of the Fifth Annual Meeting of the Eastern Apicultural Society.

TOP RIGHT—baked goods in the show.

CENTER RIGHT—trophy presented to Floyd Sandt, Easton, Pennsylvania. Presentation is being made by C. C. Dadant, Dadant & Sons, Inc., Hamilton, Illinois.

Kansas State Association Augusta, October 17th

The 1959 meeting of the Kansas State Association will be in Augusta on October 17th, beginning at 9:30 a.m. at the 4-H Club Building in the downtown section. A basket lunch is planned. Coffee will be furnished but bring your own plates and silverware. Mr. Barkman asks that all who have 35 mm. colored slides of beekeeping operations bring them to the meeting.

Prominent Florida Beekeeper Dies

A. T. Uzzell, senior in the large beekeeping operations in Moore Haven, Florida, known as Uzzell & Sons, died on May 22 at the age of 82 years. Mr. Uzzell was always prominent in Florida beekeeping and usually attended the state and district conventions.

Edney Hendrickson

Illinois beekeepers will regret to learn of the death of Edney Hendrickson of Morris, Ill. He was one of Illinois' largest beekeepers. A sudden heart attack on May 11 proved fatal within a few hours. He was returned to his old home in Arkansas for burial.

Illinois State Fair Winner

Illinois Honey Queen, Mrs. Audrey Petras. She is at the honey exhibit of her parents, Mr. and Mrs. William J. Wallanches of Downers Grove, winners of the Sweepstakes Trophy donated by Dadant & Sons.

Dr. Arnold P. Sturtevant

We have just learned from Dr. Farrar of the passing of Dr. Arnold P. Sturtevant of the Intermountain Field Station at Laramie, Wyoming. He just retired from his duties six months ago and was seventy years old on September 7th. He passed away September 17. Will try to have more details in November.

Winnebago Honey Farm of Oshkosh, Wisconsin, says: "We often do not get the Journal until about the 15th of the month when a lot of the meetings are over." So you secretaries and publicity officers, please remember this. If your meetings are in the first half of the month, get your announcements in the month before. For instance, if your meeting is the 15th of May, or before, have it announced in the March issue.

GOVERNOR'S TROPHY — Illinois Honey Queen, Audrey Petras, admires the Governor's Trophy won by W. J. Ghere, Centralia, for best display booth.

Winning exhibit for Governor's Trophy. Exhibit by W. J. Ghere, Centralia.

The attractive booth at Illinois State Fair, displayed by Mr. and Mrs. Robert Hathaway. (Mrs. Hathaway did all the work at the Fair.)

. . . ADVERTISING INDEX . . .

—The Market Place—

CLASSIFIED ADVERTISING—Net price 16 cents per word per insertion. Initials, letters or combination of letters as in street address, counted as individual words. No advertisement accepted for less than ten words. Payable cash in advance. Keyed Classified, 25 cents additional.

BEES AND QUEENS

IT PAYS TO REQUEEN. Old queens cost a lot through lost production. Young queens pay for themselves and give a good profit besides. One super of honey more in favor of the young queen is not too much to expect in most any location. We can furnish the best, select young Italian laying queens now until Nov. at $1.00 each; 10, $9.00; 25, $20.00. Air Mail Postpaid. Prompt shipment. No disease. H. C. Short, Fitzpatrick, Ala., Telephone 7229 W., Union Springs, Ala.

QUALITY ITALIAN queen bees - Each $1.00; 5 or more, 90c each; 25 and up, 85c each. A. G. Woodman Co., Grand Rapids, Michigan or Lena, S.C.

GOLDEN ITALIAN bees and queens. Select untested queens, 1 to 25 $1.10, 25 up $1.00. Carolina Bee Farm, Graham, North Carolina.

CARNIOLAN QUEENS $1.00 each. Leo Wardell, Route 6, Palestine, Texas.

FOR SALE

FOR SALE—one 24-fr. extractor with motor, one 50-gal. settling tank, etc. Russell Smalley, Beaver, Iowa.

FOR SALE: Domestic Pollen, Royal Jelly. Also Pollen Supplement Dry Mix (You add water and honey). Royal Jelly Enterprises, 1017 Los Carneros Avenue, Napa, California.

12 POUNDS ROYAL JELLY at Ten dollars per ounce. GARON BEE COMPANY, Donaldsonville, La.

PRICE LIST ON NEW CYPRESS BEE SUPPLIES, F.O.B. Homerville, Georgia. 8 or 10 FRAME Deep Supers 9⅛ in. $1.05, Bottoms 60c, Supers 5¾ in. 60c, Supers 6⅝ in. 70c, Flat Reversible Covers 60c. Call Mr. Stonecypher at Hudson 7-5963 or write, 104 Virginia Ave.

ROYAL JELLY capsules (with added vitamins) 25 mg. box of 30, $2.15, 50 mg. box of 30, $3.50. New pack (without vitamins) $7.50 per 100. Beauty Cream 2 Oz. $2.00. Prairie View Honey Co., 12303 Twelfth St., Detroit 6, Michigan.

FREE CATALOG: Cypress Bee Hives and bee supplies. Save up to 40% on hives that last for less. Myers Craft Manufacturing Co., Burgaw, North Carolina.

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. Prairie View Honey Co. 12303 Twelfth St., Detroit 6, Michigan.

COMPLETE bottling plant equipment, 2 spout filling machine, filter, pump, tanks, flash heater. Hubbard Apiaries, Onsted, Michigan.

THREE 70 gallon round honey tanks with faucets. Paper cartons for sixties. Taylor, 402 Wendy Heights, Council Bluffs, Iowa.

Copy for the department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rate of Classified advertising — 16 cents for each word, letter, figure or initial, including the name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on comb must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

FOR SALE: 700 colonies, 4 stories high 10-frame. Extracting equipment. Wilbur Ellsworth, Tarkio, Missouri.

700 HIVES COMPLETE 10-frame outfit. Excellent honey pollination locations, north central California. Box AW c/o American Bee Journal, Hamilton, Illinois.

FOR SALE: 22 Plate Filter, Flash Heater, Mixing Tank, Labeler, Bottling Machine, Storage Tank, Pump. This is a complete bottling set-up. Hubbard Apiaries, Onsted, Michigan.

ONCE USED Honey Tins good condition 30 cents each. Jewett & Sherman Company, 1200 W. 12th St., Kansas City, Missouri.

ROYAL JELLY the finest pure and fresh during all winter. Pound $80.00, ½ lb. $45.00 airmailed. A. Vallotton, Rt. 1, Box 1040, Ramona, California.

DUE TO age must sell bees, 75 colonies, no disease. A. R. Atherton, Hubbard, Texas.

GOOD FLORIDA LOCATIONS — Honey house with three room apartment, extracting and filter processing equipment, five room residence, shop and equipment on large lot, about 100 colonies of bees. Reason for selling, retired. Hardin S. Foster, Box 712, Auburndale, Florida.

FOR SALE: Cherry Burrell Pasteurizer, with Sentinel control for automatically controlling the pasteurizing temperature. Will handle 2000 lbs. of honey. Like new. Perfect condition complete with oil fired steam boiler. Make offer. Lis Honey Farms, Rt. 2, Box 512, Des Plaines, Ill.

FOR SALE because of poor health. Equipment for 600 colonies of bees for sale complete with extracting equipment. 19 registered locations. Would rent or sell 30 x 60 honey house with the bees. Contact Ralph E. Schmiedeskamp, Huntley, Montana.

HONEY FOR SALE

WHITE CLOVER HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pa.

WE CAN SUPPLY NICE white honey. Immediate delivery. Russell Smalley, Beaver, Iowa.

CERTIFIED TUPELO HONEY five pound $2.50, delivered; 60 pound 25c pound f.o.b.; 55 gallon drum 24c f.o.b., sample 25c. Phillips Honey Co., P. O. Box 1506, Clearwater, Florida.

MICHIGAN'S FINEST WHITE CLOVER HONEY. New Sixties. Fully ripened. You'll be pleased. Sample 20c. John McColl, Tecumseh, Michigan.

EXTRACTED Clover honey. Extra fine quality. Earl Alexander, Route 2, Richmond, Ind.

SECTION COMB HONEY, extra fine white clover. Wahls Apiaries, Chenoa, Illinois.

PROFESSOR LUERSSEN'S white clover honey in new 60's. Pasteurized, beautiful flavor. 1104 Maplewood Drive, Normal, Illinois.

HONEY and BEESWAX WANTED

WANTED—extra white, white and light amber honey in 60 lb. cans. Cloverdale Honey Co., Fredonia, New York.

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Mich.

HONEY AND Beeswax wanted. Melford Olson Honey Co., 5201 Douglas Drive, Minneapolis 22, Minnesota.

WRITE FOR SHIPPING TAGS and current quotations on rendered beeswax. Any amount from one pound up bought. If you have 25 pounds or more, save 25% by letting us work it into foundation for you. Walter T. Kelley Co., Clarkson, Ky.

PRODUCERS OR PACKERS interested in packing honeycomb sections for export to England please write full details, quantity, weight, price etc. to Ratcliff Bros. (Honey) Ltd. Great Horton, Bradford 7, Yorkshire, England.

SECTION COMB, CHUNK AND EXTRACTED HONEY wanted. Please contact Russell Smalley, Beaver, Iowa.

HONEY WANTED, large lots unheated in bright 60 pound cans. Eugene McClain, 12491 Lacey, Hanford, California.

ALL GRADES extracted honey in 60 lb. cans or 600 lb. drums. Prairie View Honey Co. 12303 12th St., Detroit 6, Michigan.

WANTED—Quotations on extracted honey, orange, Tupelo, Holly, Thistle, Sourwood and Cotton. One and two pound jars—100 pounds gross. Downing Fruit Farm, New Madison, Ohio.

FINEST QUALITY raw honey wanted, must be crystallized, unusual varieties with medicinal value preferred, also dry cappings. State price f.o.b. Arthur C. Norby, Star Route, Santa Barbara, Calif.

SUPPLIES

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

THE BIGGEST BEE SUPPLY CATALOGUE PUBLISHED (64 pages) free for the asking. Big factory manufacturing a complete line of wooden goods, comb foundation, metal goods, veils and gloves, carloads in stock, daily shipments. WALTER T. KELLEY CO., CLARKSON, KY.

SUPPLIES of all kinds, Brand Melters, Power Extractors, both Radial and Basket types. Hodgson Bee Supplies Ltd., New Westminister, British Columbia.

SEEDS AND PLANTS

HONEY PLANTS our specialty. Catalog on request. Pellett Gardens, Atlantic, Iowa.

POSITIONS and HELP WANTED

HELP WANTED—Seasonal, year around. Experienced or inexperienced. In Texas, North Dakota. Stewart Apiaries, Fairfax, Missouri.

SINGLE MAN, age 34, in good health, desires position during winter and spring with a beekeeper in South or West. 5 seasons with present employer in northern, New York. Gerald R. Barth, R.F.D. No. 2, Clayton, New York.

STEADY ALL YEAR around work for experienced man, to work in Texas, in queen rearing during winter months, and honey production during summer months in Minnesota. Must be able to handle large trucks. Gessner's B-Z-Bee Apiaries, 919 N. La-Bree Ave., Thief River Falls, Minnesota.

MISCELLANEOUS

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information of range sheep than any magazine published. Subscription 1 yr., $3.00; sample copy 25c. Box 189, San Angelo, Texas.

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FREE PICTURE FOLDER, "How to Make $3,000 yearly. Sparetime, Raising Earthworms!" Oakhaven 53, Cedar Hill, Texas.

CALLED OFF—Auction sale of bees will not be held Oct. 9, Harold L. Nebel, High Hill, Mo.

—Crop and Market—

by M. G. Dadant

THE CROP

The crops, of course, will be practically all in by the time this report reaches you and very little still to account for at the time this is written.

There have been no great changes in the report as mentioned in our September issue except to accentuate the fact that practically the western half of the country or at least the intermountain territory and the Pacific coast running from Washington down through into Arizona, are well below last year. As an instance, our California reporters indicate some beekeepers have only 10% of a crop while the better ones have perhaps 25% of a crop. This, of course, excludes those in the irrigated sections who do not usually travel through the desert areas. Their crop even then is less than last year. The extreme dry weather in those sections has had the effect of making the desert crop practically nil with a great inroad in other sections.

In the intermountain territory even on the west slope which usually ranks pretty well, the crop has been far below what was gathered last year. Perhaps Montana might be excepted. In some areas there the crop has been perhaps as good and in some instances better than a year ago. The Dakotas, northern Nebraska and ranging into northern Iowa rank far below last year, particularly the Dakotas and in the heavy producing areas.

Another item which must be noted is that on account of the slow flows and the minor flows, while there may be both a carryover from last year and in 1959 crop a fairly good lot of amber honey, there is very little white produced in those areas to mix with it to make a light amber honey for packaging. The result is the western honey packers are either moving east or have already moved east to try to get a supply of fine white honey which means that southern Nebraska, Kansas and ranging eastward therefrom, are in possession of some desirable honey for exporting outside of their own territory.

The western areas in Canada also are comparatively short, although perhaps not much short of last year except in British Columbia. Ontario and Quebec on the other hand report likely considerably more than a year ago.

It is in this central territory beginning in southern and eastern Minnesota and ranging through Wisconsin, Michigan, eastern Iowa, Illinois and on forward through Indiana, Ohio and the rest of the East, that the crop has been of unusual quality this year and far more than 1958 quantity. This ranges also into West Virginia and Virginia but does not include anything below that except that Texas has much better than a year ago. Even southern Illinois and Missouri on the border line of good honey crops, have been near minimums and this includes Kentucky and Tennessee.

MOISTURE

Moisture is still lacking in the intermountain and western territories and ranging into the Dakotas. Occasionally others report lack of moisture but in most instances moisture has been quite sufficient for the latter part of the season; in fact much better than a year ago which is inducing the storage of enough fall honey to put bees in excellent shape for winter.

In fact, in the sourwood territory which apparently needs early fall rains or summer rains, one would apparently feel that 1960 may be one of those old time "sourwood years." This covers pretty well the honey bee condition as mentioned above which is regulated a great deal by the amount of honey available in the form of nectar to build up colonies for the winter. We would say that in the eastern half of the country conditions are better than normal for bees going into winter in excellent condition if proper requeening has been done where the queens have been, in some cases, worn out by a much prolonged flow.

BUYERS

Buyers are not active for amber honey but some of the larger packers and buyers have been out trying to get a supply of fine white honey which they may use in their packaging to combine with such amber supplies as are available at a rather low price.

We have heard of buyers going out on a basis of 12 cents, 12½ cents and even 13 cents trying to get in an early supply of honey for fall and early winter packaging. There is no doubt whatever but that this has had a very optimistic effect on the range of prices. Unfortunately, prices now seem to be at about their lowest in some of the areas of the Central West, particularly Wisconsin and perhaps in Michigan because of an oversupply of white honey and an idea on the part of the beekeeper that he will have to take something less than 12 cents in order to get a proper market for his honey. This applies somewhat also to the Texas area.

Just how long it will take the buyers to fill up their warehouses for their fall and winter runs remains to be seen. It may be that this "spurt" in buyer offerings may subside and settle the white honey price to a little lower level. However, this is bound to be followed later by another encouraging movement in jobbing prices on honey, particularly as the embargo on honey to Germany is to be removed on January 1.

We said in our last issue that it looked like white honey should be worth 12 cents per pound at a minimum and if anything, we would "raise the ante" in view of the difficulty in securing good white honey farther west.

Montana reports the sale of several cars at 13 cents and 13½ cents but we learn of some sales in some territories as low as 11 cents and 11½ cents. On the whole there is quite a different tone to the market than a year ago even this early in the season when there was an inclined depression in the market owing to the extremely heavy California crop and the satisfactory crop in the intermountain territory.

In Canada, prices seem to be somewhat inclined to be "shaded" especially in eastern packaging areas. Likely, this is due partly to the fact that United States honey is going across the line early and perhaps at a little better figure than a year ago where the beekeeper is uninformed as to the situation in the market generally.

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